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-EM

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VOLUME II

Pages 259 through 463

PROCEEDINGS:	HEARING
COMMISSIONERS PARTICIPATING:	CHAIRMAN ART GRAHAM COMMISSIONER RONALD A. BRISE COMMISSIONER LISA POLAK EDGAR COMMISSIONER EDUARDO E. BALBIS COMMISSIONER JULIE I. BROWN
DATE:	Monday, July 21, 2014
TIME:	Commencing at 5:00 p.m. Concluding at 8:20 p.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida

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APPEARANCES: (As heretofore noted.)

I N D E X

WITNESSES

EXHIBITS

P R O C E E D I N G S

(The transcript follows in sequence from Volume 1.)

CHAIRMAN GRAHAM: I've got a quorum and a full Diet Coke, so let's move on.

MS. TAUBER: Sounds like a plan. Thank you, Mr. Chairman.

CROSS EXAMINATION

BY MS. TAUBER:

Q Mr. Koch, are you ready?

A Yes. I only got one sip of Diet Coke, though.

Q Now, Mr. Koch, we left off just talking about the years to payback. Now, the premise, generally speaking, the premise of this screen is that a reasonable person doesn't need an incentive to invest in a measure that would pay for itself in less than two years, is that correct?

MR. BUTLER: I'm going to renew my objection. This is clearly Dr. Sim's topic, and I don't think that it's appropriate questioning for Mr. Koch.

CHAIRMAN GRAHAM: Do you want to --

MS. TAUBER: May I respond?

CHAIRMAN GRAHAM: Sure.

MS. TAUBER: Absolutely. Well, Mr. Chairman, I would say a couple of things, one of which, it is mentioned in his testimony; the second of which, it is a screen that is a substantial factor in the ultimate

underlying goals, which is what this witness is sponsoring; and the third, which I'll get to, is that it is discussed extensively in deposition transcripts from Mr. Koch, as well as discovery responses from the company are sponsored by Mr. Koch on this precise point, which we'll also get to in a minute. So I think he's the best witness for the discovery which he sponsored.

CHAIRMAN GRAHAM: Let's see where it goes. I'll allow it. It's definitely in his testimony.

BY MS. TAUBER:

Q Do you want me to repeat the question?

A Please.

Q Mr. Koch, would you agree with me that the theory behind or the rationale behind the two-year payback screen that FPL employs is that a reasonable person doesn't need an incentive to invest in a measure that would pay for itself in less than two years?

A In general I'd say that. I mean, it's not only FPL who employs this screen, it's been a practice of the Commission for a long period of time and all the utilities are employing it as a screen where it's more likely, as you get down to these fast paybacks, that a participant would participate without any further rebate. In other words, they'd be a free rider.

Q So it's a reasonableness test of sorts?

A Yes, I'd agree it's a reasonableness test.

MS. TAUBER: Okay, I'd like to mark an exhibit, please. This is going to be -- Mr. Chairman, this will be identified as Hearing Exhibit 155.

CHAIRMAN GRAHAM: That's next on the list, correct.

(Exhibit 155 marked for identification.)

MS. TAUBER: And this is FPL's response to SASE's second set of interrogatories.

BY MS. TAUBER:

Q Mr. Koch, do you have the exhibit that I just circulated?

A Yes, I do.

MR. BUTLER: I'm sorry, we don't have it yet. Can you wait just one second? Thank you.

BY MS. TAUBER:

Q Are you the sponsor of this response?

A Yes.

Q Okay. Now, Mr. Koch, in this question from staff the question is whether FP&L has explored the take rate or percentage of customers that have installed energy efficiency measures with less than a one, two or three-year payback period; do you see that?

A Yes, I do.

Q And could you please read the first sentence of the response?

A No.

Q Okay. So the company has not actually measured what percentage of its customers install efficiency measures with less than a two-year payback period, is that correct?

A That's correct.

Q Now, the company under this two-year payback screen will screen out a measure based on the assumption that customers will install these measures themselves, is that correct?

A Partially correct. The -- what the screen is doing is saying that there is a high likelihood that a customer will be installing the measure themselves. It doesn't say it's 100 percent certain that a customer will install a measure themselves, but in addition that adding any sort of rebate on top of that isn't necessarily going to, you know, change that equation.

Q Now, Mr. Koch, you just testified that the screen is assuming that there will be a high likelihood. What this discovery response is telling me is that the company doesn't know what likelihood there is; it's not measuring it, is that correct?

A The specific question asked if we had been tracking customers with these levels of payback. We don't offer programs with those levels of payback, so we haven't tracked specifically those questions. But --

Q So you -- oh, I'm sorry.

A But as far as the -- as far as the two-year threshold, itself, then the reasonableness of it, there's other information which, you know, has been, you know -- well, it's been an historic practice, and it's been based upon similar type of information to which Mr. Deason testified.

Q But you don't measure whether customers -- your customers or any other electric customers -- install measures that have a two-year payback or less; you don't measure that, is that correct?

A Right. We do not measure programs or measures which FPL does not offer, and, you know, of course, we would be charging customers for that monitoring process. We do not do that.

Q So there's been no empirical analysis to prove your assumption of the two-year payback that you have done?

A There is -- I think you connected two things together there. There isn't any information of this nature that tracks that.

Q And there's no empirical analysis that identifies whether your assumption of the two-year payback screen is correct?

A Not from actual FPL customer information, no.

Q Okay. I'd like to shift gears once again and talk

a little bit about the solar pilots, which you speak to in your testimony. And if I can refer you to page 29 of your testimony.

A I'm there.

Q Great. Now, on lines ten through 15 -- or, excuse me, specifically lines 11 through 14 you mention a 25 percent price decline for the cost of residential PV. Do you see that? And by PV I mean photovoltaics.

A Yes, that's correct.

Q And would you agree that the price of solar PV more generally is declining?

A Yes. In fact, that was sort of the point of this was that what we were seeing through the pilot, as far as the customers' installed price declines, was very consistent with what had been seen nationally.

Q Now -- oh, I'm sorry.

A I was done.

Q Okay. The company is proposing its goals pursuant to FEECA and the Commission's rules implementing FEECA, is that correct?

A Yes.

Q And you referenced generally the statute in your testimony. Is it fair to say you're pretty familiar with FEECA and its requirements?

A Yes.

MS. TAUBER: I'd like to, Mr. Chairman, use a demonstrative of a section of FEECA, if that's okay with you.

CHAIRMAN GRAHAM: Sure.

BY MS. TAUBER:

Q Now, what I'm showing you, Mr. Koch, is a section of FEECA, and I'm going to read a part and you just tell me if this is what --

CHAIRMAN GRAHAM: You may have to get down by the mic so we can get you on the record.

MS. TAUBER: Okay, sorry about that.

THE WITNESS: Actually, you may need to give me a copy. I don't know if I can read it.

MR. BUTLER: And I know I can't, because it's facing the other way.

MS. TAUBER: Well, we'll endeavor to get copies. We will get copies.

MR. GUEST: If I put it there, can you all read it?

MS. TAUBER: We've got two.

CHAIRMAN GRAHAM: Do you have a hard copy for their attorneys?

MS. TAUBER: I think we do.

MR. GUEST: We might.

MS. TAUBER: We'll get you a copy.

THE COURT: Okay, thank you.

MS. HELTON: Mr. Chairman, can we have her say what part of FEECA it is?

MS. TAUBER: Yes, I apologize. It is Section 366.82. 366.82.

BY MS. TAUBER:

Q Now, Mr. Koch, do you see subsection two?

A Yes.

Q Do you see that it states the Commission shall adopt appropriate goals for increasing the efficiency of energy consumption and increasing the development of demand-side renewable energy systems?

A Yes.

Q Now, in this proceeding the company is not proposing any goals for increasing demand-side renewable energy resources, is that correct?

A I think we're proposing goals of zero.

Q You're proposing a goal of zero. So you're proposing no goals to increase demand-side renewable energy systems, is that correct?

A Well --

MR. BUTLER: I would object, asked and answered.

MS. TAUBER: I would disagree, Mr. Chairman. I did modify the question. I can ask the modified version again.

CHAIRMAN GRAHAM: You can ask him to elaborate.

BY MS. TAUBER:

Q Could you elaborate?

A Sure. A couple of things. First of all, the -- what we found through the pilots is that none of the programs were cost effective and vastly failed by wide margins and we didn't find any way to modify those, we aren't aware of any programs that would do this, and so -- that would be cost effective, and so that was the reason that I was saying that we were proposing goals of zero.

There's more to this part of FEECA here which you did not read, which says that the Commission shall take into consideration the costs and benefits to customers participating in the measure, general body of customers, et cetera, which also applies.

Q And I'm glad you mentioned that, Mr. Koch. So just to clarify -- and I wasn't as clear as I should have been earlier. The company has not proposed a numeric goal that would increase the development of demand-side energy systems, is that correct?

A Not through -- not through FEECA here, I think, if that's your question. I'm uncertain if I'm answering it correctly.

Q Now, in the prior FEECA proceeding the Commission ordered solar pilots, is that correct?

A Yes, and at that time the utilities, including

FPL, had filed information to show that none of the -- there were no cost effective programs, but this was done as a pilot, or was approved as pilots.

Q And you're now proposing to end those pilots, is that correct?

A The pilots naturally expire at the end of the year. We're proposing not to extend them.

Q So in addition to having no goals to increase the development of demand-side renewable energy systems, you would also have no pilots to explore demand-side energy renewable systems, is that correct?

A Bearing in mind that the costs for doing these are borne by the general body of customers, it's really not a prudent expenditure of money to be investing in cross-subsidies which aren't cost effective. So the answer is, yes, we're not proposing to continue these pilots and we haven't identified any other alternatives for -- that would -- that would meet that.

MS. TAUBER: I have no further questions. Thank you.

CHAIRMAN GRAHAM: Thank you. EDF?

MR. FINNIGAN: No questions, Your Honor.

CHAIRMAN GRAHAM: Thank you. Staff?

CROSS EXAMINATION

BY MR. MURPHY:

Q Yes. Mr. Koch, this is Charlie Murphy for Commission Staff. I'd like to start by discussing solar energy. FPL is proposing a community solar program that consists of a utility-owned solar facility, is that correct?

A Are you referring to the one at the end of my testimony, the voluntary --

Q Page 31, yes, sir.

A Yes, that's correct, in a separate docket.

Q In a separate docket?

A Yes.

Q Okay. And if implemented will this proposal produce demand-side renewable energy?

A It will be -- it will be these -- my understanding, these solar facilities will be hooked to the grid and not be on the customer side of the meter, if that's what you're asking me.

Q So, no?

A No.

Q Thank you. Next I'd like to talk about FPL's efforts to educate customers on the benefits of measures that have a payback period of two years or less. With respect to a two-year payback, will all customers install measures with short payback periods because it's in their best economic interest to do so?

A There's no guarantee that all customers are going

to do it. There could be multiple reasons why customers may not install a given measure beyond economics.

Q Would one of those reasons be lack of information about the payback period?

A It's possible that lack of information could affect a customer's decision. I mean, FPL does a lot of efforts in terms of educating customers, first through our home energy survey -- I'll use residential as an example -- through home energy surveys that's on line as well as in person. There's low cost, no cost measures that are identified in there as options for customers. So that provides a resource for explaining those, even though those are not part of an FPL program which the general body of customers, you know, pays rebates on.

Q And they provide materials for items with payback of less than two years; do they target that at all?

A Yes, it includes items of that nature.

Q What sort of levels of participation are you getting in the various measures that are under two years, do you know? Do you have any feedback?

A No, we don't track it for those particular -- for those particular measures.

Q If we could, you've talked around it, but could we talk about the impact of changes to codes and statutes on FPL's existing demand-side program? In the context of codes

and standards, are changes related to lighting and air conditioning significant?

A Yes, they are.

Q And why are these changes significant?

A Because the government mandate now has raised the efficiency level of the minimum that can be installed. And so, A, that takes those particular installations off the table, and, B, that reduces the amount of available energy and demand savings from those that remain, which are, you know, higher efficiency.

Q Could you be a little more specific and describe the new standards associated with residential lighting?

A I don't have in front of me the specific ones. I mean, residential lighting, there's been a reduction in the amount for -- a number of incandescents have been phased out and they're phasing out over time for different size light bulbs, as we're familiar with that. And so that's what's been raising the standards, is you can't -- at a certain point you won't actually be able to buy them anymore.

Q Yes, sir. Generally speaking do residential lighting measures tend to survive the company's proposed two-year payback screen?

A Generally, no. But I don't know that it's -- that the two-year payback screen is where they were screened out. They might have been screened out at some other step in the

process, which may be a better question for Dr. Sim, since he runs the economic screening portion.

Q Yes, sir. And in your opinion are residential customers aware of opportunities to save energy by installing more efficient lighting, such as CFLs and LEDs?

A I would say so. I mean, FPL, as part of the energy surveys and as part of our on line system does provide that as options and explains that to customers.

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

CHAIRMAN GRAHAM: Commissioners? Commissioner Brown?

COMMISSIONER BROWN: Thank you. Thank you, Mr. Koch. Question about your seventh solar pilot program, the renewable research and demonstration. Can you explain what your research findings have shown during that 2011-2013 period?

THE WITNESS: Right, there were -- that was split into two pieces, the demonstration projects where we've put facilities on sort of public venue type of places like NASA Center and Museum of Science and Discovery. And there's been a couple programs -- I think, if you can give me a second, I'll put them up.

COMMISSIONER BROWN: You mentioned, on page 30, line item --

THE WITNESS: I was just going to turn to that.

COMMISSIONER BROWN: -- one through six, line items.

THE WITNESS: I don't remember off the top of my head exactly what the results are. Not all of them are back yet. Some of them are still coming back. We haven't found one -- we haven't found one yet that looked like it would turn into a cost-effective program, if that's the nature of your question, of the ones that we've been examining.

COMMISSIONER BROWN: Well, in FPL's opening statements they referenced a limited solar R&D project in the alternative, and I didn't know if that was the latter.

THE WITNESS: No, actually, that's a different thing, and that's part of my rebuttal testimony.

COMMISSIONER BROWN: Okay, thank you. I appreciate that. Also, of the three PV solar pilots, what was the participation amount, during the same years, the pilot project?

THE WITNESS: Rather than do it off the top of my head -- for the residential PV pilot, there was -- during the period of time -- there was about 774 participants, and for business, 182 participants.

COMMISSIONER BROWN: Thank you. And those were also all first-come, first-serve?

THE WITNESS: Yes, with the exception of -- well, yes, I guess the answer is, yes, that's true.

COMMISSIONER BROWN: Thank you.

THE WITNESS: Sure.

CHAIRMAN GRAHAM: Commissioner Balbis.

COMMISSIONER BALBIS: Thank you. And thank you for your testimony here. I have a few questions. And first I think it's probably best just to follow up with Commissioner Brown, and pointing specifically to your assessment of the solar pilot programs. And you indicated that -- you indicated that they were not cost effective?

THE WITNESS: Yes.

COMMISSIONER BALBIS: In any of the tests, whether it's the RIM test, the TRC test, and even the participants test, correct?

THE WITNESS: Yes, that's correct, with the exception of in the participant, with two of the programs, one was the low income solar water heating, because we were paying the entire cost of that, and the same thing on the business PV for schools, again, FPL is paying the entire cost of those installations, as well.

COMMISSIONER BALBIS: Okay, but then you just responded to Commissioner Brown that you had 774 customers participate in the program. Why would they

participate if it even failed the participants test? That seems counterintuitive.

THE WITNESS: It does. I think that one possible explanation is that there's a high degree of free ridership here in this group, and it really wasn't an economic decision that was driving their participation in the program.

We had a lot of -- even before these pilots we had a lot of customers who were installing PV and of course the costs were higher back in, you know, '09 and '10.

COMMISSIONER BALBIS: Okay.

THE WITNESS: And probably we'll still have -- you know, we'll definitely have more going into the future, there's no question about that.

COMMISSIONER BALBIS: Okay, and then you also indicated that with the demonstration projects and also in your testimony you indicated that the educational facilities -- the schools, et cetera -- had educational materials associated with the technology.

THE WITNESS: Yes, that's right.

COMMISSIONER BALBIS: Did that information include the cost effectiveness of these programs?

THE WITNESS: Most of the information that was used in the schools wasn't focused on the cost effectiveness it was focused on the -- think of it more from a science

project, looking at the output, looking how the effects of, you know, clouds and sun were affecting the individual installations. And then that information is able to be shared across the school districts.

COMMISSIONER BALBIS: Okay, and then my last question on the pilot programs. For the solar water heater programs, you indicated that in your testimony that the prices increased 25 percent?

THE WITNESS: Yes, subject to check, that's right.

COMMISSIONER BALBIS: Essentially washing out the amount of the rebate.

THE WITNESS: Yes.

COMMISSIONER BALBIS: And yet, the PV pricing, you saw 25 percent decline. Why -- why are those different? Do you have any explanation for that? It just doesn't make sense.

THE WITNESS: No, I don't have an idea. I think it would be conjecture on my part. I mean, I know for sure, with the PV, you see costs declining, in terms of the actual materials, particularly PV panels. Those costs have been going down over the years, you know, over the past few years. So that's certainly contributing to the lower installed costs on the PV systems.

As far as concerns the increase in the water

heating, it's the same phenomenon we saw back 20-odd years ago when we had a solar water heating program. But I'd be sort of guessing as to why it is that the pricing increased. It doesn't seem to be a materials type of thing.

COMMISSIONER BALBIS: And did you account in your modeling for your assessment of the cost effectiveness of the PV systems that included that 25 percent reduction that you saw over time?

THE WITNESS: Yes, that's correct.

COMMISSIONER BALBIS: Okay, and then change gears a little bit and just focusing on your Exhibit TRK-4, the technical potential results summary, I have one or two questions on that.

THE WITNESS: Just give me a second here.

COMMISSIONER BALBIS: Sure.

THE WITNESS: Okay, I'm there.

COMMISSIONER BALBIS: Okay, in row one, under 2009 technical potential, you see a significant decrease associated with new codes and standards. And you gave an example in your testimony on the additional SEER ratings for air conditioner units -- I believe it was 14 or 15 -- and that since it didn't exceed that, you removed those programs from it.

Did you assess just increasing the efficiencies

associated with the rebate, so now the SEER rating is 16 or 18 or something higher; did you assess that?

THE WITNESS: Yes, this included -- this included all of the SEER levels -- if I understand your question correctly -- the technical potential included all the SEER levels from 13 up to at least 21.

COMMISSIONER BALBIS: Okay.

THE WITNESS: And what we did was we moved the baseline from 13 to 14, which is what the change is. And then so anything above -- so that eliminated 14 from the technical potential, and then anything above that got a proportionate adjustment, for 15, 16, et cetera, on up.

COMMISSIONER BALBIS: Okay, and then focusing on the marketplace changes, the second reduction associated with the achievement, could you give some clear examples of what would be an achievement?

THE WITNESS: Yeah, this one is, in fact, what the -- through FPL's programs we have achieved each year over the past five years, because in the update we were bringing it forward five years in time. So this is actual achievements from our DSM programs.

COMMISSIONER BALBIS: Okay, so the concept would be a customer would only participate once in the program, so you're not going to double-count it; would that be an

accurate analogy, or --

THE WITNESS: There's a -- if you're asking participating in the same program again? Was that your question? Most of the measures that FPL offers have a longer life than this time period, so you wouldn't be double-counting somebody over the stretch of five years.

COMMISSIONER BALBIS: Okay. And then my last question, I believe, you indicated on page 15 that non-commercialized emerging technologies were excluded.

THE WITNESS: Correct.

COMMISSIONER BALBIS: Okay. So when FPL develops their DSM plan to meet whatever goal the Commission establishes, you do have the flexibility, if those technologies do emerge, of creating a program associated with that?

THE WITNESS: Certainly.

COMMISSIONER BALBIS: Okay. And then my last question, which might be a little bit -- I won't say off base -- but recently, your results of the technical potential and the achievable potential and the goals that you submitted to the Commission were zero.

And yet the Environmental Protection Agency recently proposed 111(d), which set a carbon emissions limit. And in one of their building blocks, they assumed that the State could achieve a 10 percent --

they could achieve 10 percent in efficiency reductions.

Why didn't your results come up with a ten percent or something close to that?

THE WITNESS: Actually, this would be a better question for Dr. Sim. So I'm not as familiar with the methodology the EPA used to come up with those calculations to be able to sort of comment on it. I don't know if it was subjected to cost-effectiveness testing or if it was sort of like the technical potential, where it's a hypothetical amount that could be done, you know, kind of regardless of the cost associated. I'm just not familiar enough with it, sorry.

COMMISSIONER BALBIS: Okay, thank you.

CHAIRMAN GRAHAM: Commissioner Brise?

COMMISSIONER BRISE: Thank you, Mr. Chairman. Just one or two questions based upon page 13, when you talk about codes and standards and sort of focusing on your residential air conditioning program, recognizing that you had 45 percent or the company had 45 percent of summer megawatts and also 60 percent of annual gigawatt hours achievement through that program alone.

And it seems like the company is looking to move away from having some benefit or rebates associated with that program. So if you can walk me through the

rationale for that.

THE WITNESS: Okay. The -- so what's happening with this one, obviously, residential air conditioning is a huge part of our portfolio, always has been for FPL. It's not the same for everybody, but for FPL it's a big piece of our portfolio. And the -- what we pay for now is -- the baseline is -- the minimum code standard is 13. We'll pay for 14s, 15s, et cetera, and there's rebates associated with those.

So two things have happened. The first is that we now have lost the 14, and the amount of incremental energy and demand associated with each one of the higher SEERs has been reduced. And that, in and of itself, would reduce the amount of rebate that you'd be able to pay.

Secondly, what's happened is that the system for FPL has become a lot more efficient. So I think, if I remember correctly, the heat rate in the past, you know, this decade, or since 2000, has gone down 20 percent, so -- from what it was before.

So the benefits associated with DSM have also been shrinking. That also crimps the amount of rebate that could be possible, and I guess it starts with cost effectiveness, and therefore the rebate. So it isn't that FPL is, per se, looking to move away from it, it's

just kind of -- it's just math.

And so you don't want the general body of customers paying for measures which aren't going to be cost effective, and if the measures are no longer cost effective, then, you know, it's going to shrink the amount of achievement, and particularly for us, since residential air conditioning is so big, and the codes and standards is directly hitting at that. It wouldn't matter so much for somebody maybe in Minnesota, but for FPL, that's a big deal, as far as our portfolio. So that's one of the, you know, big drivers there.

COMMISSIONER BRISE: Okay, thank you.

CHAIRMAN GRAHAM: Mr. Koch.

THE WITNESS: Yes, sir.

CHAIRMAN GRAHAM: A few questions for you. Let me tell you where I'm coming from, so maybe you can better help me get to the answer or get to the conclusion.

I'm trying to figure out or trying to understand why we don't use the two-year paybacks, those things that fall in the circle of the two-year paybacks. And some of the Intervenors actually mentioned this starting out.

Looking at it from a point of view of people living below the poverty line, people that don't have the available income, what sort of programs do you

have -- and I'm looking at a list of programs you guys had.

I'm looking for programs that allow for the low to moderate income people to participate in the DSM program. I'm looking at one here that says residential solar water heating low income pilot. Can you tell me what that was, kind of explain to me --

THE WITNESS: Yes.

CHAIRMAN GRAHAM: -- how that was rolled out, and how you picked the people that were involved in it?

THE WITNESS: Yeah, in that particular case we worked with agencies like Habitat for Humanity. And when they were refurbishing, we would donate the water heating, the solar water heating system to them to be installed.

So that would have ongoing savings for the family or whoever was moving in, and it reduced the cost for Habitat to install something otherwise which probably would have been cost prohibitive.

CHAIRMAN GRAHAM: Was there any other programs that you did that addressed specifically low income?

THE WITNESS: We've got a couple. Interestingly, the primary one that really hits at low income is load management, because that program is zero cost for the customer to get in, but yet they get bill credits every

months. This is, you know, a pretty robust program for low income customers, as it is for many of FPL's customers, obviously.

And we do also have a low income program specifically targeted at low income where it deals with -- it's administered through the Weatherization Assistance -- I'm trying to remember what WAP stands for, I've used the acronym so long I've forgotten -- through those agencies, and target specifically low income customers.

And those are typically low-cost type of measures, caulking, weather stripping, things of that nature that are done to improve the efficiency, energy efficiency, for those customers, as a couple examples.

CHAIRMAN GRAHAM: I missed that on my list. What sort of education-type programs do you have?

THE WITNESS: The education programs are pretty much the same for all customers, but as part of it, to get, I think, specifically at what you're interested in, part of the types of things that are included are, you know, information on adjusting the temperature of your water heater, adjusting how you manage your air conditioning, lighting measures, which I think was referred to earlier, the opportunities for lighting and things of that nature, but focuses a lot on tips and

low-cost, no-cost types of measures to implement, even though those aren't -- many of those are not offered as a specific program by FPL.

CHAIRMAN GRAHAM: And how is that information disseminated?

THE WITNESS: Either through a home visit -- we do about 150,000 of those a year -- or on line that information is available, as well, and it's sort of coupled with an energy dashboard that people have but they can walk through the information and it provides suggestions as what would be things that might be beneficial for them, as far as saving energy is concerned.

CHAIRMAN GRAHAM: All right. So the weatherization program and the solar hot water -- the solar water heating program are two that you had associated for the low income, and to me it seems like --

THE WITNESS: Those are load management, too. Sorry to interrupt.

CHAIRMAN GRAHAM: And load management, that's correct. I'm sorry, I did write that down. I forgot. Explain to me a little bit about the load management program.

THE WITNESS: How the load management program works is for air conditioners, heaters -- pool pump probably

doesn't apply in this case -- and water heaters, FPL will install a transponder at that equipment. And if there's a situation where it's a capacity type of emergency, we'll turn off the equipment on cycles that are, you know, based per tariff.

But the customer receives -- there's no cost to the customer for that installation, and then the customer receives a monthly credit on their bill for the fact that they are participating in the program. And in fact load management is by far our most cost-effective program, or programs. The load management program is both for residential and for commercial-industrial.

CHAIRMAN GRAHAM: And I see quite a few people are actually participants in that program.

THE WITNESS: Yes, about 830,000 or so, I think, was the count that I had referenced in here.

CHAIRMAN GRAHAM: All right, let's go back to the two-year payback, the free riders, as it was referred to earlier. Let's start off with me. I know for a fact I have more than one incandescent bulb in my house. And so that's an automatic impact right there, switching that sort of stuff out.

Why wouldn't that be the sort of thing that you'd want to do? So, for example, send the coupon out when you send the power bill out, that they can turn in that

old incandescent light bulb for a new LED light bulb, and that's instant impact, and that's everybody from the very affluent to the very poor. It's just a matter of going to Home Depot with the coupon and switching it out. Why is that not the kind of program that you could do?

THE WITNESS: I think clearly it's practical to do something like that. I think the issue, though, has to do with the cost effectiveness of the program. And for particular ones of these, probably Dr. Sim could speak directly to measure X or measure Y.

But the issue is that the general body of customers is going to pay for that. And from our standpoint, supporting RIM, we don't want to pay for things that are going to be a cross-subsidization, and that won't be cost effective, I guess, is probably the correct way to say it. I think I probably misstated that.

CHAIRMAN GRAHAM: I mean, there's going to be some people that are out there -- like, for example, I'm not going to change out my dishwasher because I can find a high-efficiency one, I'm going to run that dishwasher until it dies on me, and then I'm going to change it out to a high-efficiency one.

I guess I have the same mentality when it comes to that incandescent light bulb. You know, when it goes

out, I'm going to change that light bulb out. And so you have some people that maybe view things the same way I do, and it's kind of hard to get rid of something until it's no longer working, until it's no longer functional.

And it seems to me that that's a way -- maybe that's just something that you do it initially and it cleans everything out and then moves that ball forward, rather than waiting for all the incandescent bulbs that no longer work to work their way through the system.

I'm trying -- I guess I'm just trying to get a better understanding on why we don't do that two-year payback. To me it seems like the low-hanging fruit.

THE WITNESS: Yeah, I'm not certain that the two-year payback is the step in the process that actually -- to use the light bulb example -- is kicking out the light bulb which would not pass the preliminary screening process but -- I lost my train of thought there. Sorry. I apologize for that.

But I think the real thing is that in fact when you described what you were talking about, you're kind of making a financial trade-off decision, where you're deciding, you know what, it's not worth -- you know, I'm not perceiving that I would save enough by doing this that it would be worth my effort to prematurely change

something out before it's -- before it's the end of its useful life.

And, of course, with lighting, you also find a lot of things -- you've got lights in your closet that it probably goes on for a smidgen of time every day. You've got other lights which are used heavily, and those ones, of course, get changed out faster.

So it's a difficult -- it would be a difficult thing to actually gauge what would be a good way to pursue that. There have been some examples of where light bulb programs kind of went awry. But I don't want to just focus on light bulbs. But I think that's really the crux of it.

I mean, everybody is making a decision whether it's a good -- you know, whether they perceive that the value of something exceeds the -- exceeds the cost of doing it. And I think that's kind of what our information helps people make decisions on, but, by the same token, we don't want to charge everybody for something that many people would do on their own, even if not everybody would have done it on their own.

CHAIRMAN GRAHAM: Yeah, but still thinking about that person that can barely pay his rent this month and can barely pay his power bill this month, the last thing he's going to do is go out and buy a light bulb that he

doesn't need today. So therefore he's going to keep that light bulb until it fails. And then, when he needs that light bulb, he switches it out.

And I guess -- and this is the part that it's difficult to get past -- that same person is subsidizing that guy that's doing some of these more expensive programs, like going to the high-efficiency washer and dryer, high-efficiency dishwasher, and all those other sort of things.

THE WITNESS: Yeah, you're correct, I mean, that is a conundrum. The ones of the programs that do pass, they are supporting that, just like we all do, through our payments. By the same token, there's a benefit that has been established that is at minimum break-even, and typically better than that, that will, you know, yield them the return over time.

So the fact that everybody pays into it, as long as the programs are RIM cost effective, everybody is going to -- you know, is going to be better off because the benefits exceeded the costs of those programs.

CHAIRMAN GRAHAM: Okay. Once again, I didn't mean to put you on the spot, but I'm trying to understand this.

THE WITNESS: No, I appreciate it, I appreciate it.

CHAIRMAN GRAHAM: Mr. Butler, rebuttal.

REDIRECT EXAMINATION

BY MR. BUTLER:

Q Thank you. Just a couple of areas for redirect. Mr. Koch, you were asked by Ms. Tauber a series of questions that showed the level of gigawatt hour savings that we're projecting as goals in the upcoming time period is lower than the company has had in previous goal-setting periods. Do you remember that?

A Yes.

Q Could you provide, hopefully, a fairly short big picture explanation of why FPL sees its goals headed in that direction?

A I think a couple of reasons. The first is -- well, a number of the reasons are what we have discussed here: The codes and standards affecting certain programs, and then the reduction in the system benefits costs, all of those have reduced the actual available amount pool of DSM programs that we identified in the achievable potential that could possibly be considered for meeting the need for the -- for FPL on a projected basis.

But then, that's just a potential set of measures which have proven preliminarily to be cost-effective. But to really know if they're going to be cost effective, you have to combine them with the supply-side options. And what has sort of happened, mathematically, here at the end, is that

the -- a certain amount of need was identified -- and Dr. Sim can speak to this more clearly -- that came up to the 337 megawatts, and then you economically stack up from the most cost-effective to the lesser cost-effective in order to satisfy that need.

And for us in load management, which is by far the most cost-effective programs, fill the vast majority of that. And the optimization and load management -- as I think many people are aware -- does not have a lot of gigawatt hours or kWh associated with it.

So what ended up -- what ends up happening is you can fill the megawatts with mostly load management and then you get the next most efficient EE programs on top and then the winter megawatts and the gigawatt hours come along with that that are associated with those programs.

Q Thank you. Mr. Koch, you were also asked by Ms. Tauber concerning whether FPL has any empirical information regarding the adoption by customers of measures in the two-year payback. Do you remember --

A Yes.

Q -- that series of questions?

A Yes.

MR. BUTLER: I'd like to show you -- Mr. Chairman, this is an Interrogatory 81 from Staff's Third Set of Interrogatories. It's already part of an identified

exhibit. It's part of Hearing Exhibit 96. I'd just like to show this to Mr. Koch and ask him a couple of questions about it.

CHAIRMAN GRAHAM: Sure.

MR. BUTLER: Thank you.

CHAIRMAN GRAHAM: If it's on point to rebuttal of something that has already been asked.

MR. BUTLER: It is.

CHAIRMAN GRAHAM: Okay.

MR. BUTLER: I'm sorry, I don't have multiple copies of it to hand out. It's really just a simple couple of questions I want to ask him about it to confirm on the record.

MS. TAUBER: Mr. Chairman, could I just ask is there a copy for me, since it was directed at my question?

BY MR. BUTLER:

Q Mr. Koch, are you familiar with this interrogatory?

A Yes, I am.

Q Okay. And it would be fair to characterize the attachment as an adoption curve?

A That's correct.

Q Okay. And can you briefly describe what an adoption curve is?

A An adoption curve determines -- illustrates, for a given amount, years of payback, how much is the expected customer adoption, percent customer adoption.

Q And what's the source of the data that resulted in this adoption curve?

A This was provided by ICF, who is a -- as one of their parts of their practice, a DSM consultant.

Q And did FPL use this in connection with its achievable potential determination?

A Yes, we did.

MR. BUTLER: Okay, thank you. That's all the redirect that I have. Thank you.

CHAIRMAN GRAHAM: Okay, let's look at exhibits. SACE, let's start with you.

MS. TAUBER: Mr. Chairman, we had hearing exhibits 153 through 155 that we would move for admission into the record at this time.

CHAIRMAN GRAHAM: FP&L, any objections to moving 153 through 155 in?

MR. BUTLER: No objections.

CHAIRMAN GRAHAM: We'll move those in, 153, 154 and 155, into the record.

(Exhibits 153, 154 and 155 admitted in evidence.)

MR. BUTLER: And then we would move in Exhibits 18 through 25, the prefiled exhibits to Mr. Koch's

testimony.

CHAIRMAN GRAHAM: Also move in Exhibits 18, 19, 20, 21, 22, 23, 24 and 25 into the record.

(Exhibits 18, 19, 20, 21, 22, 23, 24 and 25 admitted in evidence.)

CHAIRMAN GRAHAM: Staff, you didn't have any exhibits, did you?

MR. MURPHY: No, sir.

CHAIRMAN GRAHAM: All right, that's it. Mr. Koch, thank you very much.

(Witness excused)

MR. BUTLER: Shall we move on to our next witness?

CHAIRMAN GRAHAM: Move on.

MS. CANO: FPL calls Dr. Steven Sim. And I don't believe he's been sworn.

CHAIRMAN GRAHAM: Dr. Sim, if I can get you to raise your right hand.

Thereupon,

DR. STEVEN R. SIM

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

DIRECT EXAMINATION

BY MS. CANO:

Q Good evening.

A Good evening.

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

A My name is Steve Sim, business address is 9250 West Flagler Street, Miami.

Q By whom are you employed and in what capacity?

A By Florida Power and Light as Senior Manager of Integrated Resource Planning.

Q Did you prepare and cause to be filed 78 pages of prefiled direct testimony in this proceeding on April 2nd, 2014?

A Yes.

Q Do you have any changes or revisions to make to your prefiled direct testimony?

A Yes, I have two. On page six, line one, we're referencing a Rule 25-17.00. There should be a two in front of the one, so it reads .0021.

The other change is on page 70, line 17. It reads current resource planning analysis led. It should be lead, l-e-a-d. Those are the only changes I have.

Q If I were to ask you the same questions contained in your prefiled direct testimony, with those changes, would your answers be the same?

A Yes, they would.

MS. CANO: Chairman Graham, I ask that the prefiled

direct testimony of Dr. Sim be inserted into the record as though read.

CHAIRMAN GRAHAM: We will insert Dr. Sim's prefiled direct testimony into the record as though read.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF DR. STEVEN R. SIM

DOCKET NO. 130199 - EI

April 2, 2014

Q. Please state your name and business address.

A. My name is Steven R. Sim, and my business address is 9250 West Flagler Street, Miami, Florida 33174.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company (FPL) as Senior Manager of Integrated Resource Planning in the Resource Assessment & Planning Department.

Q. Please describe your duties and responsibilities in that position.

A. I supervise and coordinate analyses that are designed to determine the magnitude and timing of FPL's resource needs and then develop the integrated resource plan with which FPL will meet those resource needs.

Q. Please describe your educational background and professional experience.

A. I graduated from the University of Miami (Florida) with a Bachelor's degree in Mathematics in 1973. I subsequently earned a Master's degree in Mathematics from the University of Miami (Florida) in 1975 and a Doctorate in Environmental Science and Engineering from the University of California at Los Angeles (UCLA) in 1979.

While completing my degree program at UCLA, I was also employed full-time as a Research Associate at the Florida Solar Energy Center during 1977 - 1979. My responsibilities at the Florida Solar Energy Center included an evaluation of Florida consumers' experiences with solar water heaters and an analysis of potential renewable energy resources including photovoltaics, biomass, wind power, etc., applicable in the Southeastern United States.

In 1979 I joined FPL. From 1979 until 1991, I worked in various departments including Marketing, Energy Management Research, and Load Management, where my responsibilities concerned the development, monitoring, and cost-effectiveness analyses of demand side management (DSM) programs. In 1991 I joined my current department, then named the System Planning Department, where I held different supervisory positions dealing with integrated resource planning (IRP). In late 2007 I assumed my present position.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits SRS-1 through SRS-16 which are attached to my testimony:

Exhibit SRS-1	FPL's Resource Planning Process as Applied to DSM Goal-Setting;
Exhibit SRS-2	Excerpt from FPL's 2014 Site Plan Addressing FPL's Need for a 10% Generation-Only Reserve Margin (GRM) Reliability Criterion;

Exhibit SRS-3	Economic Elements Accounted for in DSM Preliminary Screening Tests: Benefits Only;
Exhibit SRS-4	Economic Elements Accounted for in DSM Preliminary Screening Tests: Benefits and Costs;
Exhibit SRS-5	Summary Results of Preliminary Economic Screening of Individual DSM Measures (w/o and w/CO_2 Costs);
Exhibit SRS-6	Summary Results of Preliminary Economic Screening of Individual DSM Measures: Sensitivity Cases;
Exhibit SRS-7	Forecasted Fuel and Environmental Compliance Costs;
Exhibit SRS-8	Projection of FPL's Resource Needs for 2015-2025 with No Incremental DSM Signups After 2014;
Exhibit SRS-9	Comparison of DSM Achievable Potential Summer MW Values with FPL's Projected Summer Resource Needs (Assuming the Resource Needs are Met Solely by DSM);
Exhibit SRS-10	Overview of Supply Only and With DSM Resource Plans;
Exhibit SRS-11	Comparison of the Five Resource Plans: Economic Analysis Results and Consequences;
Exhibit SRS-12	Example of Levelized System Average Electric Rate Calculation for One Resource Plan: RIM 337 MW;

Exhibit SRS-13	Additional Cost Needed to be Added to RIM 337 MW Plan to Increase its Levelized System Average Electric Rate to That of TRC 337 MW Plan;
Exhibit SRS-14	Comparison of the Five Resource Plans: Projection of System Average Electric Rates and Customer Bills (Assuming 1,200 kWh Usage);
Exhibit SRS-15	Comparison of the Five Resource Plans: Projection of System Emissions; and
Exhibit SRS-16	Comparison of the Five Resource Plans: Projection of System Oil and Natural Gas Usage.

Q. What is the scope of your testimony?

A. My testimony addresses seven main topics:

(1) FPL's integrated resource planning process, particularly the application of a multi-step process that is used by FPL for a DSM goal-setting docket;

(2) The analytical methods used to project FPL's future resource needs, key forecasts and assumptions, and selection of a specific Supply option with which individual DSM measures were initially analyzed;

(3) The various screening tests that FPL used in a series of preliminary economic screening analyses of individual DSM measures;

(4) The approach used to perform preliminary economic screening analyses of individual DSM measures, and the results of those preliminary screening analyses;

(5) The specific projections of FPL's resource needs for the 2015 through 2024 goals-setting period, plus one additional year (2025), and how these projections, in combination with the projected Achievable Potential values for DSM, are utilized to first develop a Supply Only resource plan, and then develop "With DSM" resource plans;

(6) The results of the economic and non-economic analyses of the resource plans and FPL's proposed DSM Goals for the 2015-2024 time period based on these analytical results; and,

(7) Resource planning perspectives regarding FPL's proposed DSM Goals.

Q. Please summarize your testimony.

A. The application of FPL's resource planning process, using current forecasts and assumptions, and recognizing the highly-efficient nature of FPL's generation system, leads to the conclusion that FPL's customers will be best served by proposed DSM Goals of 337 MW (Summer) for the 2015-2024 DSM Goals period. (The Summer MW aspect of DSM is the most important DSM characteristic in regard to resource planning for FPL's system. Therefore, I describe the DSM portfolios that were analyzed by their respective DSM Summer MW amounts. FPL witness Koch discusses the associated Winter MW and annual GWh aspects of FPL's proposed goals in his direct testimony.)

FPL's proposed DSM Goals presented in this filing are based on the results of FPL's most recent resource planning process. This not only meets the

requirements of Rule 25-17.001 (3) F.A.C., it also ensures that the proposed DSM Goals reflect FPL's specific resource needs and the individual characteristics and economics of FPL's utility system. FPL's integrated resource planning process, as applied to the setting of DSM Goals, consists of six analytical steps.

The results of applying FPL's resource planning process to determine DSM's proposed role in FPL's resource plans for 2015-2024 time period can be summarized as follows:

- Preliminary economic screening of the individual DSM measures identified in FPL's Technical Potential update was performed utilizing the RIM, TRC, and Participant preliminary screening tests in conjunction with a years-to-payback screening test to account for free riders. The measures that survived this preliminary economic screening resulted in total Achievable Potential of 526 MW (Summer) using the RIM preliminary screening test path and 576 MW (Summer) using the TRC preliminary screening test path.

- These two Achievable Potential values were then compared to FPL's projected resource needs for the goals-setting years of 2015-2024. FPL has much larger resource needs in the years 2019 through 2021 than what the DSM Achievable Potential is capable of meeting. Therefore, FPL must assume the addition of a Supply option beginning in year

2019. This reduced the amount of DSM needed to meet remaining resource needs, so FPL extended its analyses to examine what role DSM could have in meeting additional resource needs in the year 2025.

- FPL created a "Supply Only" resource plan that assumed no incremental DSM signups after the year 2014. In addition, FPL created four "With DSM" resource plans. Two of the With DSM resource plans used an optimization process to select the most economic DSM measures so that the plans met FPL's resource needs and complied with all of FPL's reliability criteria. The other two With DSM plans simply incorporated all of the projected Achievable Potential, but did not comply with all of FPL's reliability criteria.

- The five resource plans were analyzed from both economic and non-economic perspectives. In the economic analyses, the RIM 337 MW resource plan was the clear winner. It results in the lowest levelized system average electric rates over the full analysis period of any of the five plans, and results in the lowest annual electric rates for each year in the 2015-2025 time period of any of the four With DSM plans. In addition, the RIM 337 resource plan is the only With DSM resource plan that is projected to avoid cross-subsidization of customer groups due to DSM implementation.

- In the non-economic analyses, there were no significant differences between the Supply Only and any of the With DSM resource plans: All five plans are projected to result in comparably lower FPL system fossil fuel use and system emissions in 2025 compared to 2015.

- Based on the analysis results, FPL concludes that the RIM 337 MW resource plan is the best resource plan with which to serve its customers. Accordingly, FPL is proposing that its DSM Goals for the years 2015-2024 be based on the DSM portfolio included in the RIM 337 MW resource plan.

Q. Is it reasonable and appropriate for FPL's proposed Goals to be lower than the current Goals?

A. Yes. FPL's proposed DSM Goals for 2015-2024 (337 MW Summer) are appropriate and logical from a resource planning perspective, particularly in light of several important considerations.

First, the amount of energy efficiency projected to be delivered by federal and state codes and standards over the respective 10-year Goals periods has greatly increased. Therefore, a significant amount of energy efficiency will be delivered to FPL's customers through codes and standards. This also represents a significant decrease in potential energy efficiency that might otherwise have been available from utility DSM measures.

Second, compared to forecasts and assumptions used in the 2009 DSM Goals analyses, current forecasts and assumptions have changed greatly. Among these are: (i) current forecasted fuel costs are approximately 50% lower than forecasted in 2009; (ii) current projected CO_2 compliance costs are significantly lower than those projected in 2009 (and are now projected to be zero for most years in the 2015-2024 Goal-setting time period); and (iii) FPL's generating system is more fuel efficient than projected in 2009 and is projected to become even more fuel efficient in the future.

Each of these three factors has greatly benefited FPL's customers, and will continue to benefit them, through lower fuel and emission costs. These developments are very good for FPL's customers. The fact that lower fuel and emission costs also lower the potential benefits from kWh reductions offered by DSM measures is simply a consequence of a very positive picture for FPL's customers. This lowers the economic competitiveness of DSM options versus Supply options, which, in turn, leads to lower proposed DSM Achievable Potential values. A diminished potential for utility DSM measures, combined with lower potential cost savings from utility DSM measures, make lower proposed DSM Goals a logical outcome of a very positive situation for FPL's customers.

In addition, FPL's customers are projected to receive significantly more total energy efficiency than was projected in 2009 when the impact of codes and

standards is added to FPL's proposed goals. In 2009, FPL's customers were projected to receive 1,255 MW from codes and standards, plus 664 MW for FPL's proposed DSM Goals, for a total of 1,919 MW of energy efficiency/DSM for the 10-year goals-setting period. Today, FPL's customers are projected to receive 1,823 MW from codes and standards. When added to FPL's proposed DSM Goals of 337 MW, the total energy efficiency/DSM to be delivered to FPL's customers is 2,160 MW for the current 10-year goals-setting period. This is approximately 13% more total energy efficiency/DSM than was projected in 2009 from the combination of codes and standards and FPL's proposed goals.

Furthermore, the resource plan that includes this proposed DSM is projected to result in both the lowest levelized system average electric rates over the analysis period for all resource plans analyzed, and the lowest annual electric rates of any of the DSM-based resource plans for each year in 2015-2025 time period. This is a very desirable position for FPL's customers.

I. FPL'S RESOURCE PLANNING PROCESS

Q. Does the DSM Goal-setting process require the use of a utility's own resource planning process?

A. Yes. Rule 25-17.0021 F.A.C., subsection (3) states in part that: "*In a proceeding to establish or modify goals, each utility shall propose numerical*

goals for the ten year period..., based upon the utility's most recent planning process..." (Emphasis added).

Q. Why is it important for a utility to use its own resource planning process in a DSM Goal-setting process?

A. The use of a utility's own resource planning process, using forecasts and other information specific to the individual utility, ensures that decisions on DSM resource additions for that utility are based both on the individual utility's projection of its specific resource needs and on a determination of the economics of DSM resource additions for its individual utility system. This approach is also consistent with how decisions on generation resources are made because these decisions are based on the individual utility's projected resource needs and determinations of the economics of the generation resource options being considered.

Q. Are FPL's proposed DSM Goals based on FPL's most recent resource planning process?

A. Yes. After updating a number of key forecasts and assumptions in late 2013 that are being used in FPL's 2014 resource planning work, including the DSM Goals analyses discussed in this testimony, FPL's integrated resource planning process was used to analyze DSM resources for the years 2015 through 2024 (i.e., the time period addressed in the current DSM Goals docket). FPL also used these updated assumptions and its integrated resource planning process in its analyses leading to its 2014 Ten-Year Site Plan (Site Plan) filing.

Q. What are the objectives of FPL's integrated resource planning process?

A. FPL's basic IRP process was developed in the early 1990s and, with enhancements over the years, has been used since that time to determine: 1) the timing of when new resources are needed, 2) the magnitude (MW) of the needed resources, and 3) the types of resources that should be added. The determination of the types of resources that should be added is typically based, after FPL's reliability criteria are met, primarily on what resources result in the lowest system average electric rates for FPL's customers.

It should be noted that when only Supply options (i.e., power plants or power purchases) are the resources in question, the determination of what resource to add can be made on the basis of lowest total system costs. In cases addressing only Supply options, the outcome when viewing results from the lowest total cost perspective is the same as when viewing results from the lowest average electric rate perspective. This is because the number of gigawatt-hours (GWh) over which the costs are recovered from customers does not change. Consequently, when only Supply options are being analyzed, the results of an economic analysis indicate simultaneously the most economical Supply option from both a total cost and an electric rate perspective.

However, when DSM options are being analyzed, as is the case in this docket, one cannot examine only projected system costs. This is because the number of GWh over which these costs are recovered from customers will change due

to the GWh reduction aspect of DSM options. If the utility's costs are recovered over fewer GWh, the result is upward pressure on the utility's electric rates that are charged to all customers. Therefore, when analyzing DSM options, one must specifically calculate electric rates in order to determine which resource option, Supply or DSM, is the most economic resource option to add.

Q. Please provide an overview of FPL's IRP process.

A. An overview of FPL's IRP process is presented annually in FPL's Site Plan filings. One can summarize FPL's IRP process as having the following four tasks:

- Task 1: Determine the magnitude and timing of FPL's new resource needs.
- Task 2: Identify the resource options and resource plans that are available to meet the determined magnitude and timing of FPL's resource needs (i.e., identify the available competing options and resource plans).
- Task 3: Evaluate the competing resource options and resource plans in regard to system economics and non-economic factors.
- Task 4: Select a resource plan from which FPL management will commit, as needed, to the nearer-term options.

Q. Was this resource planning approach used to analyze the DSM resource options?

A. Yes. The IRP process outlined above describes the basic approach that FPL takes in its major resource planning efforts, including previous DSM Goals dockets, and which was taken in the analyses presented in this filing.

Once the timing and magnitude of FPL's resource needs were established, FPL then identified resource options that could meet those needs. These options included a wide range of DSM measures that were applicable to FPL and initially found to be potentially economic, plus Supply options with which the DSM measures must compete. FPL then developed five resource plans that included these competing resource options. System economic and non-economic analyses were conducted, and a decision was made regarding the best resource plan and associated resource options, both DSM and Supply, for FPL's customers.

Q. How does FPL apply its IRP process to the specific analyses that are needed for a DSM Goals-setting docket?

A. In a DSM Goals-setting docket, Florida's electric utilities disregard the DSM options they are currently implementing and, 'starting from scratch', project how much DSM they should implement for the next 10 years. FPL approaches that task by applying its IRP process in a 6-Step analysis approach. This same basic process was used by FPL in its prior DSM Goals-setting dockets.

Q. Please briefly discuss the 6-Step resource planning process for DSM Goals-setting.

A. An overview of the 6 step planning process is presented in Exhibit SRS-1. The process can be summarized as follows:

Step 1: The theoretical Technical Potential for DSM is determined in which practical considerations of cost, market forces, the utility's resource needs, etc. are all ignored. The end result of this step is a list of individual DSM measures that appear to be applicable in a utility's service territory. FPL witness Koch describes in his direct testimony how FPL updated its 2009 Technical Potential with current information.

Step 2: Assuming no incremental DSM signups occur after December 31, 2014, FPL's projected resource needs for 2015 through 2024 were determined. Two determinations of resource needs are made: one if the resource needs are met solely by Supply options and one if the resource needs are met solely by DSM options. These two projections are different because of FPL's 20% total reserve margin criterion. For example, if the resource need to be met solely by DSM options for a given year is 100 MW, the resource need to be met solely by Supply options for the same year is 120 MW.

The results of these determinations are used in two ways. First, using the projected resource needs if the needs are met solely by Supply

options, a generation addition is selected for use in the preliminary economic screening of DSM measures (which occurs in Step 3). Second, these determinations are used later to create both a Supply Only resource plan and at least one With DSM resource plan which is used for the detailed system economic and non-economic analyses that occur in Step 6.

Step 3: In this step, all of the individual DSM measures identified in the Step 1 technical potential work are analyzed using a series of preliminary economic screening evaluations against a single Supply option. This series of screening calculations utilize the Participant screening test, the RIM preliminary screening test, the TRC preliminary screening test, and the "years-to-payback" screening test. The DSM measures that survive this preliminary screening are deemed to be potentially economical resource options for FPL's system and are retained for more detailed system analyses. In addition, the maximum incentive level that the utility can pay for each surviving DSM measure is identified in this step.

Step 4: The surviving DSM measures, and their accompanying maximum incentive levels, are then analyzed to determine the projected Achievable Potential over the 2015 through 2024 time period. The resulting projection for each DSM measure represents the maximum annual signups for each year of the 10-year DSM Goals period. Cumulatively, the sum of these maximum annual signups for each

DSM measure identifies how many MW of DSM resources are projected to be available each year to potentially meet FPL's projected annual resource needs. FPL witness Koch addresses the process of evaluating the Achievable Potential for the surviving DSM measures in his direct testimony.

Step 5: In this step, the projections of resource needs developed previously in Step 2 are used again in several ways. First, FPL uses the projection of resource needs, if the needs are met solely by Supply options, to develop a resource plan in which only Supply options are added. This resource plan is referred to as the "Supply Only" resource plan. Next, FPL compares the projected maximum annual DSM MW signups identified in Step 4 to the projected annual resource needs if those needs are met solely by DSM options. From this comparison, at least one "With DSM" resource plan is developed. This resource plan may consist solely of DSM measures, or a combination of DSM and Supply options, for the 10-year Goals-setting period. At the conclusion of Step 5, the Supply Only and With DSM resource plans have been developed for the more detailed system analyses.

Step 6: These resource plans are analyzed from both economic and non-economic perspectives. The best resource plan is identified and the amount of incremental DSM included in that plan is selected as FPL's proposed DSM Goals for the 2015-2024 time period.

Q. Does FPL's 6-step analytical process outlined above result in Supply and DSM resource options being evaluated on a level playing field?

A. Yes. One of the objectives of integrated resource planning is to evaluate all resource options under consideration using a "level playing field" approach. FPL's analyses evaluate both Supply and DSM resource options in terms of the resource options' ability to meet FPL's resource needs. In addition, these analyses allow the resources to be fully evaluated from an economic perspective in regard to both benefits and costs, as well as from non-economic perspectives, using an identical set of evaluation metrics. In regard to the economic analyses, all projected cost impacts that will affect FPL's customers in terms of the electric rate levels they will be charged are accounted for.

Q. Which of the 6 steps outlined above will you be addressing in your testimony?

A. I address Steps 2, 3, 5, and 6 of this process, plus other topics, in the remainder of my testimony. FPL witness Koch addresses Steps 1 and 4, plus other topics, in his direct testimony.

II. STEP 2 OF FPL'S PLANNING PROCESS: METHODS AND ASSUMPTIONS USED TO PROJECT FPL'S RESOURCE NEEDS

Q. How does FPL determine what its projected future resource needs are?

A. FPL uses three reliability criteria in projecting what its future resource needs are. One criterion is a minimum total reserve margin of 20% for both Summer

and Winter peak hours. The 20% total reserve margin criterion was approved by the Florida Public Service Commission (FPSC) in Order No. PSC-99-2507-S-EU issued in Docket No. 981890-EU.

The second reliability criterion used by FPL is a Loss-of-Load-Probability (LOLP) criterion. Simply stated, LOLP is a projection of how well an electric utility system may be able to meet its firm demand (i.e., a measure of how often firm load may exceed available resources). In contrast to a reserve margin approach that looks at the one Summer peak hour and the one Winter peak hour, the LOLP approach looks at the peak hourly demand for each day of the year. The LOLP approach takes into consideration the probability of individual generators being out-of-service due to scheduled maintenance or forced outages. LOLP is typically expressed in terms of "numbers of times per year" that the system firm demand could not be served. FPL's LOLP criterion is a maximum of 0.1 days per year. This LOLP criterion is commonly used throughout the electric utility industry.

The third reliability criterion utilized by FPL is a minimum generation-only reserve margin (GRM) of 10%. The issue of having a sufficient generation component of the projected total reserve margin has been discussed annually in FPL's Site Plan filings beginning in 2011. In FPL's 2014 Site Plan, FPL introduced the minimum 10% GRM criterion and discussed the reasons the criterion was adopted. The new GRM criterion is applied beginning with the

Summer of 2019. A relevant excerpt from the 2014 Site Plan that addresses FPL's need for the GRM criterion is attached as Exhibit SRS-2.

For at least the last decade or two, FPL's projected need for additional resources has been driven by the Summer total reserve margin criterion. This again was the case in FPL's current reliability analysis that was the basis for FPL's projected resource needs for 2015-2024. (For reasons that will be discussed later in my testimony, FPL also examined its projected resource needs for an additional year, 2025, in its DSM Goals-setting analyses.)

Q. In making its projection of FPL's future resource needs, what forecasts and assumptions were used?

A. In order to perform the numerous analyses necessary for determining FPL's proposed DSM Goals, it was necessary to develop and "freeze" various forecasts and assumptions in the 4th Quarter of 2013 so that the analyses could begin. The primary forecasts and assumptions include the following:

1) FPL's October 2013 load forecast and an October fuel cost forecast (both of which were also used in FPL's 2014 Site Plan analyses);
2) Consistent with FPL's 2014 Site Plan, there are five approved and/or planned changes to FPL's generating system, including: (i) the retirement of the existing Putnam Units 1 & 2 (a decrease of 498 MW Summer) at the end of 2014; (ii) the completion of the Port Everglades modernization in 2016 (an increase of 1,237 MW Summer); (iii) the removal of all existing gas turbines (GTs) in Broward County (a

decrease of 1,260 MW Summer) for environmental reasons, and the addition of 5 new combustion turbines (CTs) (an increase of 1,005 MW Summer) in Broward County, by the end of 2018; (iv) the addition of the firm capacity portion of the EcoGen power purchase agreement (PPA) in 2021 (an increase of 180 MW); and (v) the addition of Turkey Point Units 6 & 7 in 2022 and 2023, respectively (an increase of 2,200 MW Summer); and,

3) No incremental DSM signups after the end of 2014.

Q. Does the October 2013 load forecast account for projected energy efficiency impacts from federal and state codes and standards?

A. Yes. The forecast assumes a Summer peak reduction of 1,823 MW from federal and state codes and standards during the 2015 - 2024 time period.

Q. From a resource planning perspective, is an energy efficiency impact delivered through codes and standards, and accounted for in the load forecast, viewed in the same way as the same energy efficiency impact delivered by utility DSM measures?

A. Yes. From a resource planning perspective, an identical forecast of lower firm load will be used in planning analyses regardless of whether the energy efficiency impact is provided by codes and standards or by utility DSM. The only meaningful difference is that, if the energy efficiency impact is delivered through codes and standards, this specific impact is no longer available to be delivered by utility DSM.

Q. What is the implication of assuming no incremental DSM signups after the end of 2014?

A. This assumption has two implications. First, it allows FPL to start its DSM Goals analyses for the 2015 – 2024 period with the proverbial "clean sheet of paper," which allows a fresh look at DSM in light of current load forecasts, fuel cost forecasts, changes in FPL's generating system, etc. Second, the removal of the previously projected DSM signups after 2014 increases the magnitude (MW) of FPL's projected resource needs and moves those projected resource needs closer to the present. The resulting greater magnitude of, and earlier timing of, future resource needs will tend to enhance the potential for DSM options to be economically competitive.

Q. Earlier you mentioned that one of the outcomes of the projection of resource needs was to select a Supply option for use in the preliminary economic screening of individual DSM measures. What Supply option was selected for the preliminary screening?

A. A combined cycle (CC) unit of 1,269 MW (Summer) with a projected in-service year of 2019 was selected for the preliminary screening work. This CC unit is assumed to be similar to the CC unit that is now being installed at the Port Everglades site in the modernization project.

III. STEP 3 OF FPL'S PLANNING PROCESS: OVERVIEW OF PRELIMINARY ECONOMIC SCREENING TESTS FOR DSM

Q. Which preliminary screening tests for DSM were used in this early step of FPL's DSM Goals-setting analyses?

A. FPL utilized four DSM screening tests in these analyses: the Participant screening test, the RIM preliminary screening test, the TRC preliminary screening test, and the years-to-payback screening test using a two-year criterion. All four of these tests are designed to provide preliminary economic screening information regarding the individual DSM measures being evaluated. The intent of the Participant test is to determine if it makes economic sense for an individual customer to participate in a specific DSM measure. The intent of the RIM and TRC tests is to provide preliminary information with which to judge whether it might be potentially beneficial for all of FPL's customers if FPL were to offer the DSM measure being evaluated. The perspective that is supposedly taken with these two screening tests is of the utility system as a whole; i.e., for all customers including both non-participants and participants. (However, as will be discussed shortly, only the RIM test really addresses the issue of whether it makes sense for a utility to offer a DSM measure when considering all customers on a utility system.) The intent of the years-to-payback test is to address the "free rider" issue so that the utility, and all of its customers, are not making incentive payments,

and incurring administrative costs, for DSM measures that customers will likely purchase even without an incentive payment.

Q. In its 2009 DSM Goals filing, FPL accounted for the projected costs for SO_2, NO_x, and CO_2 in the RIM and TRC preliminary screening tests and referred to those screening tests as the "E-RIM" and "E-TRC" tests. Is FPL accounting for any projected environmental compliance costs in the screening tests in the current analyses?

A. Yes. FPL is accounting for projected compliance costs for SO_2 and NO_x in both the RIM and TRC preliminary screening tests. Consistent with the direction provided in the Order Establishing Procedure for this docket (Order No. PSC-13-0386-PCO-EU), FPL is not accounting for projected CO_2 compliance costs in these screening tests in FPL's base case analyses, but FPL is analyzing the impact of projected CO_2 compliance costs in sensitivity screening analyses. In an attempt to avoid confusion regarding the accounting of CO_2 compliance costs in these two screening tests, I will refer to these screening tests only by the terms "RIM" and "TRC" in the remainder of my testimony. In order to indicate whether CO_2 costs are included in the screening analyses, I will use the terminology of "w/CO_2" and "w/o CO_2" for the different analyses.

Q. Have the four preliminary screening tests been used by FPL in each of the prior DSM Goals filings?

A. Yes. Furthermore, the Participant test, the RIM test, and the TRC test are currently required by the Commission as part of the Commission-approved

cost-effectiveness methodology for individual DSM program filings even outside of a goals-setting docket. In regard to the years-to-payback test, Rule 25-17.0021 F.A.C., subsection (3) states that, in proposing DSM Goals, each utility's proposed Goals *"...shall reflect consideration of...free riders..."* Consequently, FPL has used a years-to-payback test with a 2-year threshold in all of its DSM Goals filings starting with the initial DSM Goals docket in 1994. FPL witness Deason discusses the years-to-payback test further in his direct testimony.

Q. Please discuss the primary differences between the Participant, RIM, and TRC preliminary screening tests.

A. The differences in these three preliminary screening tests can best be described by comparing the specific economic elements that are accounted for in each test. Exhibit SRS-3 presents a comparison of the economic elements that are accounted for in the calculation of potential DSM benefits in each of these three screening tests.

A listing of the types of DSM-related economic benefits that may potentially be obtained by individual DSM participants and/or a utility system appears in the two shaded columns. Adjacent to the shaded columns are columns that indicate whether a specific screening test actually accounts for those potential economic benefits in the test.

Two main conclusions can be drawn from this exhibit. First, all three tests account for all of the relevant economic impacts that represent potential benefits from either participating in, or from implementing, a DSM measure. Second, in regard to the RIM and TRC tests, the tests are identical in regard to accounting for potential benefits that may be derived from DSM measures. In other words, these two tests will provide an identical calculation of potential benefits for a specific DSM measure.

Q. Does each of the three tests also include all relevant DSM-related cost impacts?

A. No. Exhibit SRS-4 expands the benefits-only perspective presented in Exhibit SRS-3 to also include DSM-related cost impacts. Several additional conclusions can be drawn from this exhibit.

First, the Participant screening test does account for all of the relevant DSM-related potential costs that will be incurred by a customer who chooses to participate in a DSM measure. Therefore, the Participant screening test fully accounts for all potential benefits and costs that are received and/or incurred by a potential participant in a DSM measure. This is obviously a good way to assess the impacts on potential participants.

Second, the RIM screening test also accounts for all of the relevant DSM-related potential cost impacts that will be incurred by the utility and all of its customers, both DSM participants and non-participants. Therefore, the RIM

screening test fully accounts for all benefits and costs that are received and/or incurred by all of a utility's customers if the utility decides to offer a specific DSM measure. This is obviously appropriate for assessing the impacts on all customers, participants and non-participants alike.

Third, the TRC screening test does not account for all of the relevant DSM-related potential cost impacts that will be incurred by the utility and all of its customers. This so-called "total resource cost" test omits the incentive payments made to DSM program participants, costs that are recovered from all of the utility's customers. FPL paid approximately $190 million in DSM incentives during 2013. These incentive payments represent approximately 78% of FPL's total DSM expenditures in 2013 of approximately $244 million that will be recovered from customers through the ECCR clause. (Obviously, incentives represent a substantial cost impact to customers and should not be disregarded in the DSM Goal-setting process.)

Furthermore, the TRC screening test also omits the economic impact of unrecovered revenue requirements on the utility's electric rates. In addition, the TRC screening test includes the participant's out-of-pocket costs for participating in the DSM measure. These participant's out-of-pocket costs are not recovered from utility customers (and these costs are already captured in the Participant test). Thus the TRC screening test does not appropriately

assess the cost impacts of DSM measures on either participants or non-participants.

Therefore, only the combination of the Participant and RIM screening tests correctly include all of the economic impacts, both benefits and costs, which are incurred by participants and by all of a utility's customers when DSM measures are implemented. In contrast, the TRC screening test omits two important costs/economic impacts and "double counts" the participant's costs which are already captured in the Participant screening test.

Q. Does the inclusion of projected environmental compliance costs for emissions in the RIM and TRC preliminary screening tests allow – to the extent possible in a screening test - both of these screening tests to fully account for the GWh-related potential benefits of DSM measures?

A. Yes. FPL's use of the RIM and TRC preliminary screening tests have always fully accounted for the potential fuel savings benefits from the GWh reductions of DSM measures and these calculations for the two screening tests result in identical projected fuel savings benefits for a specific DSM measure. By accounting for projected SO_2 and NO_x compliance costs in the base case screening analyses, and by also accounting for projected CO_2 compliance costs in a sensitivity screening analysis as previously mentioned, the RIM and TRC screening tests also identically account for potential emission-related benefits from the GWh reductions of DSM measures (as well as emission-related benefits and costs from the MW reductions of DSM measures).

Consequently, both the RIM and TRC screening tests fully account for all projected potential fuel and emission cost-savings benefits from the GWh reduction aspect of DSM measures. (However, only the RIM screening test also accounts for the impact of unrecovered revenue requirements on electric rates from the GWh reduction aspect of DSM measures.)

IV. STEP 3 OF FPL'S PLANNING PROCESS (CONTINUED): PRELIMINARY ECONOMIC SCREENING ANALYSIS APPROACH & RESULTS

Q. What is the objective of the preliminary economic screening of individual DSM measures that is carried out in Step 3 of FPL's process?

A. The objective is to identify the individual DSM measures that have the greatest potential for creating a portfolio of DSM measures that will be economic when that portfolio is evaluated in detail for the FPL system as a whole as part of a resource plan.

Q. Please provide an overview of how the preliminary economic screening of individual DSM measures was conducted.

A. Each individual DSM measure was evaluated along two separate screening "paths." One path examined the DSM measure from the perspectives of the RIM screening test, the Participant screening test, and the years-to-payback screening test using a two-year criterion. The other path examined the DSM measure from the perspectives of the TRC screening test, the Participant

screening test, and the years-to-payback screening test using a two-year criterion. The two paths are referred to as the "RIM" and "TRC" paths, respectively.

The screening analyses evaluated 850 DSM measures. These 850 measures then started down the two screening paths described above. Each path utilized four screening evaluation steps as applicable to the cost categories that are included in either the RIM or TRC screening tests, plus the Participant screening test and the years-to-payback screening test.

These four screening steps each utilize a full accounting of projected potential benefits from the DSM measure and a step-by-step accounting of DSM-related costs. These screening steps can be summarized as follows:

Screening Step 1: Each of the 850 DSM measures is evaluated using only the costs of unrecovered revenue requirements for the RIM screening test, and the participant's incremental out-of-pocket costs for the TRC screening test. Those measures surviving this screening step are carried forward to Screening Step (2), while measures failing at this step (or at any later step) are dropped from further analyses.

Screening Step 2: Administrative costs are now added to those costs considered in the initial screening step for both the RIM and TRC paths.

As before, only those measures surviving the RIM and TRC screening tests in this step are carried forward.

Screening Step 3: This screening step applies only to the RIM screening path and only to certain DSM measures. In this step, for those remaining measures that do not pass the Participant test without an incentive payment, the amount of incentive payment needed to result in a Participant screening test benefit-to-cost ratio of 1.00 is first calculated. Then that incentive payment is also applied to the specific measure for the RIM screening test. It is then determined if the measure still passes the RIM screening test. (Note that this screening step does not apply to the TRC path because the TRC screening test does not account for incentive payments made by a utility to participating customers.) Those measures surviving this step are carried forward to the final screening step.

Screening Step 4: The years-to-payback test using a two-year criterion is applied in this final step to both of the paths. For each DSM measure that has survived the first three screening steps, a calculation is made to see if a participant's incremental out-of-pocket costs will be fully recovered from bill savings and, if applicable, tax savings, in two years or less without any incentive payment from the utility. Only those DSM measures for which the participant's costs are not fully recovered in two years without an

incentive payment are assumed to have survived this final step in the screening process.

Q. What were the results of the preliminary economic screening?

A. The results of the preliminary screening are presented in Exhibit SRS-5. As directed by Order No. PSC-13-0386-PCO-EU, FPL performed a base case analysis assuming no CO_2 costs ("w/o CO_2"), but also performed a sensitivity analysis in which CO_2 costs were assumed ("w/CO_2").

As shown in Exhibit SRS-5, from the "starting point" of 850 DSM measures, 120 measures survived the RIM screening path, and 300 measures survived the TRC screening path, using the w/o CO_2 cost assumption. These values changed only slightly when CO_2 costs were included: 124 measures survived the RIM screening path and 301 measures survived the TRC screening path. Both lists of DSM measures, those that survived the "w/o CO_2" screening, and those that survived the "w/CO_2" screening, were carried forward into Step 4 (Achievable Potential) of the resource planning process.

Q. Was it expected that so many more DSM measures survived the TRC path compared to the RIM path?

A. Yes. Because the TRC screening test does not account for all of DSM-related cost impacts that will be recovered from customers through electric rates, while the RIM screening test does account for all of these cost impacts, TRC is a much more lenient "test." Consequently, it is to be expected that more

DSM measures will survive a "test" that does not account for all of the cost impacts that will affect all of FPL's customers.

Q. Did FPL perform any additional sensitivity case screening analyses of the DSM measures?

A. Yes. In addition to the "w/CO_2 cost" sensitivity screening analysis just mentioned, 8 other sensitivity screening analyses were performed as directed in Order No. PSC-13-0386-PCO-EI. These 8 sensitivity cases include various combinations of High, Medium, and Low fuel cost forecasts and 1-year, 2-year, and 3-year criteria for the years-to-payback screening test.

Q. How were the various fuel cost sensitivity forecasts and years to payback sensitivity periods developed?

A. FPL followed its usual practice in regard to the development of the High and Low fuel cost forecasts. A Medium fuel cost forecast was first developed. Then FPL adjusted the Medium fuel cost forecast upwards (for the High fuel cost forecast sensitivity), or downwards (for the Low fuel cost forecast sensitivity), by multiplying the annual cost values from the Medium fuel cost forecast by a factor of (1 + the historical volatility in the 12-month forward price, one year ahead) for the High fuel cost forecast sensitivity, or by a factor of (1 – the historical volatility of the 12-month forward price, one year ahead) for the Low fuel cost forecast sensitivity. In regard to the development of years-to-payback criterion sensitivity values, FPL added or subtracted 1 year to or from its base case 2 years-to-payback criterion, resulting in 3 years-to-payback, and 1 year-to-payback, sensitivity case criteria. FPL believes that

this variation is sufficient to illustrate the sensitivity of the screening process to differences in the years-to-payback criterion.

Q. What were the results from these sensitivity case screenings?

A. The number of DSM measures that survived the four screening steps for both the RIM and TRC paths for these sensitivity cases are presented in Exhibit SRS-6. In regard to the number of DSM measures that survive the RIM and TRC screening paths, there is considerable variation in regard to the results as the assumptions change from one sensitivity case to another. Two examples demonstrate this point.

- The first example looks at changing only the fuel cost forecast assumption while assuming no change in the years-to-payback screening test criterion. When varying the fuel cost forecast using a 2 years-to-payback criterion, the numbers of DSM measures surviving the RIM screening path vary considerably: 62 (Low Fuel), 120 (Medium Fuel), and 231 (High Fuel). However, there is relatively little variation in the numbers of DSM measures surviving the TRC screening path: 274 (Low Fuel), 300 (Medium Fuel), and 290 (High Fuel).

- The second example looks at changing the years-to-payback criterion while assuming no change in the fuel cost forecast. When using the Medium fuel cost forecast, and varying the years-to-payback criterion between 1, 2, and 3 years, the numbers of DSM

measures surviving the RIM screening path vary as follows: 140 (1-year payback), 120 (2-year payback), and 67 (3-year payback). The numbers of DSM measures surviving the TRC screening path are: 393 (1-year payback), 300 (2-year payback), and 193 (3-year payback).

As mentioned above, the results of the sensitivity case screenings vary considerably. In general, higher numbers of DSM measures continue to survive the sensitivity case screenings with the TRC screening path and more variation can be seen in the numbers of DSM measures surviving the RIM screening path. The primary reason for the differences in sensitivities between the two screening paths is due to the differences between the RIM and TRC screening tests themselves. As explained previously, the RIM screening test includes all DSM-related cost impacts that will be recovered from all of FPL customers, but the TRC screening test includes only one of these costs (administrative costs). Thus, for the same DSM measure, the TRC screening "test" will typically result in a much higher projected benefit-to-cost ratio than will the RIM screening test. Thus the TRC screening test makes it appear that there is a much larger benefits "cushion" above the partial set of DSM costs that screening test includes.

Thus when a major assumption, such as the fuel cost forecast, changes, the results from the TRC screening path vary little due to this projected (but

inaccurate) "cushion" assumed in the TRC screening test. Because the RIM screening test fully accounts for DSM-related cost impacts, this screening test projects a lower (and accurate) cushion of net benefits compared to costs. In other words, many more DSM measures are projected to be closer to the benefits-to-costs breakeven point. When a major assumption such as the fuel cost forecast is changed, the RIM screening path is more likely to show a greater number of DSM measures moving across this breakeven point.

Also, because the TRC screening test does not account for either unrecovered revenue requirements or utility incentive payments, a greater number of DSM measures with high kWh reduction values survive the TRC screening path than survive the RIM screening path. The years-to-payback screening test determines how quickly a DSM measure pays for itself. This is largely driven by the kWh reduction value of the DSM measure being evaluated. Therefore, it is to be expected that, because the TRC screening path allows more high kWh reduction DSM measures to survive the screening, as the years-to-payback criterion is changed from 1 year to 2 years to 3 years, more DSM measures from the TRC screening path will fail to survive the years-to-payback screening test than from the RIM screening path.

Q. What fuel cost forecast, and what years-to-payback criterion, is FPL basing its proposed DSM Goals on and why?

A. FPL is basing its proposed DSM Goals on analyses that used the Medium fuel cost forecast and a 2-year criterion for the years-to-payback screening test. In

regard to the fuel cost forecast, it is only practical to set DSM Goals using a single fuel cost forecast. Using the Medium fuel cost forecast is the logical choice because it presents a reasonable middle ground regarding future fuel costs. In regard to the years-to-payback criterion, FPL believes that the 2-year criterion is an appropriate threshold with which to address the free riders issue. FPL witness Deason discusses this issue in more detail in his direct testimony

Q. What were the forecasts for future fuel and environmental compliance costs that FPL used in the analyses?

A. A summary of the forecasts for fuel costs and environmental compliance costs used in the preliminary economic screening of the individual DSM measures, and in all other analyses that will be discussed in the remainder of this testimony, are presented in Exhibit SRS-7.

Q. Please discuss the CO_2 compliance cost forecast values in Column (8) of Exhibit SRS-7.

A. This forecast is a "composite" CO_2 cost forecast based on separate CO_2 cost forecasts from FPL and Duke Energy Florida. The creation of a composite CO_2 forecast allows both Duke Energy Florida and FPL (the only FEECA utilities performing a w/CO_2 sensitivity analysis) to utilize a single CO_2 compliance cost forecast in the DSM Goals analyses as directed in Order No. PSC-13-0386-PCO-EU. This composite forecast was developed by essentially taking the annual CO_2 compliance cost values from each company's current CO_2 cost forecasts, summing these two values, and dividing by two. This

created a new set of projected CO_2 cost values for each year for use in this docket.

Q. After determining the number of DSM measures that survived this series of preliminary screenings, was any other information developed for each of the surviving measures?

A. Yes. For each surviving DSM measure, a maximum incentive payment that could be paid by FPL was developed. For each measure that survived the RIM screening path, the maximum incentive was the payment that allowed the measure to pass the RIM test, the Participant test, and the years-to-payback test using a 2-year criterion. For each measure that survived the TRC screening path, the maximum incentive was the payment that allowed the measure to pass the Participant test and the years-to-payback test using a 2-year criterion. (Again, the TRC screening test does not account for incentive payments.)

At this point, Step 3 of the resource planning process has been completed and FPL has identified DSM measures that survived preliminary economic screening and the maximum incentives that can be paid for those measures.

Q. Please briefly describe the next step in analyzing individual DSM measures.

A. The next step (Step 4) in the analyses of individual DSM measures is the development of the projected Achievable Potential for each surviving DSM measure. For each measure that survived the preliminary screening using

either the RIM or the TRC screening paths, the measure's maximum incentive payment is used to develop a projection of maximum annual market penetration for each year in the 2015-2024 time period. FPL witness Koch discusses the determination of the DSM Achievable Potential, and presents the results of those analyses, in his direct testimony.

The sum of the annual Achievable Potential values for all surviving DSM measures represents the maximum contribution, in terms of MW reduction, that DSM can make each year towards meeting FPL's resource needs. Once the annual resource needs, and the annual contribution DSM can make towards meeting those needs, are known, a "With DSM" resource plan(s) that includes a DSM portfolio can be developed for more detailed system analyses.

Q. Would it be appropriate to stop at this point and propose or set DSM Goals based only on this information?

A. No. It would be inappropriate to propose or set DSM Goals at this point, or at any other interim step in the 6-step process, for at least two reasons. First, FPL is required to propose DSM Goals based on its most recent resource planning process. FPL's resource planning process consists of 6 steps. At this point only 3 of the 6 analytical steps have been conducted. Therefore, if FPL were to propose DSM Goals at this point it would be violating this requirement because only half of its resource planning process has been completed at this point.

Second, and more importantly, if DSM Goals were to be proposed or set at this point, or at any other interim step, it would mean that DSM Goals were being set with far less than a complete set of information. The objective of FPL's 6-step resource planning process is to ensure that a detailed, complete system analysis of potential DSM measures is conducted. At this point, Step 3 of the 6-step process, a number of important considerations have not yet been accounted for including: (i) FPL's resource needs over the 10-year Goals-setting time period; (ii) analyses to determine the most economic DSM measures from among the DSM measures that survived the preliminary economic screenings (i.e., a competition among the DSM measures themselves); (iii) the creation of one or more DSM portfolios and With DSM resource plans based on FPL's resource needs and the results of this DSM measure "competition"; (iv) system economic analyses involving resource plans with and without DSM portfolios; and (v) system non-economic analyses of these same resource plans.

This information will be provided in the remaining steps in FPL's resource planning process. This not-yet-provided information is much more important to making an informed decision regarding the selection of resource options, whether Supply or DSM, than are the results of preliminary screening evaluations.

Therefore, if the objective is to set DSM Goals using a complete set of information – as should be the case for a decision regarding any type of resource option – then it would be inappropriate to propose or set DSM Goals with only the information that has been discussed to this point.

V. STEP 5 OF FPL'S PLANNING PROCESS: DEVELOPMENT OF THE RESOURCE PLANS

Q. Would you please provide a projection of FPL's annual resource needs for each year in the 2015-2025 time period?

A. Yes. That projection is provided in Exhibit SRS-8. The projection uses the same assumptions previously discussed: FPL's October 2013 load forecast, current assumptions related to FPL's generating system, and no incremental DSM signups after December 31, 2014.

Column 10 provides projections of resource needs based on FPL's 20% total reserve margin criterion if those needs are met solely by Supply options. Then, by accounting for the 20% total reserve margin criterion, Column 11 provides projections of resource needs if those needs are met solely by DSM options. As expected due to the 20% total reserve margin criterion, the projected resource needs if met solely by DSM options are 20% smaller than the projected needs if met solely by Supply options.

The projected resource needs are based on the calculation of total reserve margins for both Summer and Winter. Due to higher projected generating capability (because of colder ambient air and water temperatures) and lower forecasted loads in Winter, FPL projects no additional Winter resource needs in this time frame. Therefore, the magnitude and timing of FPL's overall resource needs are being driven by the Summer total reserve margin. (Note that Exhibit SRS-8 also provides a projection of FPL's GRM in Column 9. I will return later in my testimony to discuss projected GRM in regard to the development of resource plans.)

The key information presented by this exhibit is that, assuming no DSM incremental signups after 2014 and no generation additions/changes other than those previously mentioned. FPL begins to have resource needs in the year 2018. The projected Summer MW need for 2018 is quite small: 36 MW of Supply MW or 30 MW of DSM MW. The projected need increases to 1,094 MW (Supply) or 911 MW (DSM) in 2019.

The projected need further increases through the years 2020 and 2021. Then, due to the planned addition of the new Turkey Point Units 6 & 7 in 2022 and 2023, respectively, the projected need decreases in those two years. Due to forecasted increasing peak load, FPL's projected needs further increase to a total of 2,403 MW (Supply) or 2,003 MW (DSM) by the year 2025.

These projections of resource needs, plus the projected DSM Achievable Potential values, were used to develop multi-year resource plans with which potential DSM levels can be analyzed in greater detail from a system perspective.

Q. Why is it appropriate to develop and use multi-year resource plans in analyses leading to the setting of DSM Goals?

A. It is not only appropriate to do this, but also necessary if one is to capture and accurately compare all of the impacts that competing resource options with different capacity amounts, terms-of-service, heat rates, types of fuel, MW and GWh reduction impacts, and costs will have on FPL's system.

For example, assume we are comparing two Supply options, Option A and Option B, that both offer the same amount of capacity. Option A has a heat rate of 7,000 Btu/kWh and is offered to FPL for 15 years. Option B has an 8,000 Btu/kWh heat rate and is offered for 20 years. Evaluating these options from a resource plan perspective allows one to capture the economic impacts of both the heat rate and term-of-service differences. The lower heat rate of Option A will allow it to be dispatched more than Option B, thus reducing the run time of FPL's existing units more than will Option B. This results in greater production cost savings for Option A. However, Option B's longer term-of-service means that it defers the need for future generation for a longer period. Therefore, Option B will provide capacity avoidance benefits for more years than will Option A.

Only by taking a multi-year resource plan approach to the evaluation can factors such as these for competing Supply options be captured and effectively compared. In the case of DSM options, there are similar somewhat contradicting impacts upon the utility system. For example, the GWh reduction effect of DSM lowers the amount of energy that must be served, but the MW reduction effect of DSM is designed to defer/avoid the addition of new generating units that, if added, may significantly improve the fuel efficiency of the utility system. Consequently, one aspect of DSM (GWh reduction) can decrease system fuel usage, but the other aspect of DSM (MW reduction) will avoid the addition of fuel-efficient new units that would have also lowered system fuel usage if the DSM options had not been implemented, thus increasing system fuel usage.

Once again, only by taking a multi-year resource plan approach to the evaluation can these contradicting impacts of DSM upon the utility system be properly captured and compared.

Q. Using these projected resource needs, what was the Supply Only resource plan developed by FPL?

A. The Supply Only resource plan consists of the following generation additions for the 2018 through 2025 time period (in addition to the five generation system additions/changes previously discussed):

– A 36 MW PPA is added in 2018;

– A new CC of 1,269 MW (Summer) is added in 2019;

– A 308 MW PPA for two years is added for 2020 and 2021;

– An 84 MW PPA for one year is added in 2024; and,

– A second new CC of 1,269 MW (Summer) is added in 2025.

Q. What were the Achievable Potential values for DSM and how does this DSM potential match up with FPL's projected resource needs?

A. The results of the Achievable Potential evaluation, which are discussed in detail in FPL witness Koch's direct testimony, now become inputs for the resource planning process. Exhibit SRS-9 presents the projected total annual Achievable Potential Summer MW for DSM measures identified under either the RIM screening path (Column 1) or the TRC screening path (Column 2). These annual DSM potential Summer MW values are also compared to the annual resource need projections, if the resource needs are met solely by DSM options, which are carried over from Column 11 in Exhibit SRS-8 and presented here in Column 3.

Q. Are the Achievable Potential values shown in Exhibit SRS-9 based on the projections for the DSM measures that survived the "w/o CO_2" base case screening or the DSM measures that survived the "w/CO_2" sensitivity screening?

A. The Achievable Potential values shown in this exhibit are based on DSM measures that survived the "w/o CO_2" screening. As previously mentioned, FPL analyzed both sets of DSM measures in regard to the projected Achievable Potential. These analyses showed there was relatively little difference in the respective Achievable Potential MW: 526 MW (RIM

screening path) and 576 MW (TRC screening path) that survived the "w/o CO_2" screening, and 508 MW (RIM screening path) and 577 MW (TRC screening path) that survived the "w/CO_2" screening. Due to these similarities, and the instruction provided by PSC-13-0386-PCO-EU to use a "w/o CO_2" assumption as a base case for proposing DSM Goals, FPL used the DSM measures that survived the "w/o CO_2" screening in all remaining analyses.

Q. What are the key points presented in Exhibit SRS-9?

A. There are two key points. First, as previously mentioned in this testimony, and noted in FPL witness Koch's direct testimony, the differences between the Achievable Potential Summer MW values for DSM measures emerging from the RIM screening path or the TRC screening path are also relatively small. This is seen in Columns 1 and 2 of the exhibit. Second, as indicated in Columns 4 and 5, there is sufficient Achievable Potential DSM to meet the very small (30 MW) need in 2018, but there is not enough Achievable Potential DSM Summer MW from either the RIM screening path or the TRC screening path to meet FPL's resource needs again until the year 2023. Nor is there sufficient Achievable Potential DSM to meet FPL's resource needs in 2024.

Q. What does this mean in regard to creating a DSM portfolio that will be part of a With DSM resource plan?

A. It means that one or more Supply options will need to be added in the year 2019 in order to meet FPL's resource needs for 2019. This addition of a Supply option in 2019 will also reduce FPL's projected remaining resource

needs from the projected resource need values for 2020 – 2024 presented in Exhibits SRS-8 and SRS-9.

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).

In the 2015-2024 goals-setting years, FPL's largest resource need is projected in the year 2021: 1,577 MW (Supply) or 1,314 MW (DSM). The addition of a CC unit in 2019 would also reduce the remaining resource need for the year 2021 to 308 MW Supply (= 1,577 – 1,269) or 257 MW DSM (= 308/1.20) . In other words, assuming a CC unit is added in the year 2019 to meet the 2019 resource need, 257 MW of DSM by 2021 would meet the projected remaining resource needs for the years 2020 and 2021.

Furthermore, because the resource need in 2021 is larger than the resource need for the remaining years of 2022 through 2024 in the goal-setting period, 257 MW of DSM added by 2021 would also meet FPL's remaining resource needs through the year 2024. In other words, assuming a CC unit is added in 2019 to meet the large 2019 resource need, there would be no more need for any DSM additions in the years 2022 through 2024 once 257 MW of DSM is implemented by 2021.

In light of this, FPL chose to expand its analysis of resource needs to include the year 2025. This increases the resource need that DSM signups during 2015-2024 might reasonably address.

Q. Please describe the With DSM resource plans that were developed for further analyses.

A. The With DSM resource plans that were developed and analyzed are presented in Exhibit SRS-10 along with the Supply Only resource plan. For each of these resource plans, the following information is provided for the 2015-2025 time period: (i) specific generation additions, (ii) cumulative DSM Summer MW additions, (iii) annual total reserve margin values, and (iv) annual GRM values.

Q. Please discuss how FPL developed the RIM 337 MW and TRC 337 MW resource plans, while ensuring that the plans meet both the 20% total RM and the 10% GRM reliability criteria.

A. FPL's approach in developing these two resource plans involved three steps:

- First, if there was insufficient DSM Achievable Potential in a given year to meet the resource need based on the 20% total RM criterion, FPL added new generation in that year. This was the case for the year 2019 in which a new CC unit was added. (A CC unit is projected to be FPL's best self-build generation option for this near-term resource need.)
- Second, FPL examined the year 2025 and determined that 730 MW of capacity would be needed to exactly meet the 10% GRM in that year. A PPA of that amount was assumed to address this longer term need in 2025. The remaining resource need to exactly meet the 20% total RM in 2025, if that remaining need is met by DSM, is projected to be 337 MW of DSM. FPL then developed two DSM portfolios that would achieve 337 MW of DSM by the end of 2024 in the most economic and efficient manner using first the RIM perspective, then the TRC perspective.
- Third, FPL then inserted PPAs in the years 2020 and 2021 to ensure that the GRM criterion was met in those two years.

This approach resulted in the minimum amount of generation being added to meet the GRM criterion and the maximum amount of DSM then being added to exactly meet the remaining resource needs based on the 20% total RM criterion in 2025.

Q. Would the amount of cost-effective DSM included in the RIM 337 MW or TRC 337 MW Resource Plans have been different if FPL's Achievable Potential had been larger?

A. No. For the reasons I discuss in my testimony, FPL could not have cost-effectively accommodated more than 337 MW of DSM in the 2015-2025 period. Therefore, having a higher level of Achievable Potential would not have changed the amount of DSM in these resource plans.

Q. Did FPL develop and analyze two With DSM resource plans that do not meet FPL's GRM criterion?

A. Yes. These are the RIM 526 MW plan and the TRC 576 MW plan. These plans were primarily developed as sensitivity cases to help respond to a request from the FPSC Staff. In a mid-2013 discussion the Staff had with parties interested in the upcoming DSM Goals docket, Staff requested that, if a utility uses a type of generation-only reliability criterion, the impact of the criterion on the utility's proposed goals should be presented in the utility's testimony. Therefore, FPL decided to develop and analyze two resource plans, one RIM-based and one TRC-based, that ignored the GRM criterion.

Q. Please discuss the RIM 526 MW and TRC 576 MW sensitivity case plans and explain how they were developed.

A. These two plans both utilize the full Achievable Potential DSM that emerged from the RIM and TRC screening paths respectively, and ignore the GRM criterion. They were developed using the following three steps:

- First, if there was insufficient DSM Achievable Potential in a given year to meet the resource need based on the 20% total RM criterion, FPL added a new CC unit in that year. This was the case for the year 2019.
- Second, the full annual Achievable Potential DSM MW values were added for each year of the analysis period (without any attempt to optimize DSM measure selections or the timing of DSM additions).
- Third, FPL then inserted PPAs in appropriate amounts, one PPA value for the RIM 526 MW plan and another PPA value for the TRC 576 MW plan, in the year 2025 to supplement the total Achievable Potential DSM values so that the two plans met the 20% total RM criterion in that year.

Q. Do these two sensitivity case resource plans consistently meet the GRM criterion in the 2015-2025 period?

A. No. As shown on Exhibit SRS-10, both of these sensitivity case plans fall short of the 10% GRM criterion in the years 2020, 2021, and 2025. As a result, these two resource plans are referred to as "non-conforming" plans while the Supply Only, RIM 337 MW, and TRC 337 MW resource plans, which do meet the 10% GRM reliability criterion, are referred to as "conforming" plans.

Q. Does using the GRM criterion automatically lower the amount of DSM that can be included in a resource plan?

A. No. In fact, by itself the GRM criterion has no impact on the amount of DSM that can be included in a resource plan. However, the total RM percentage value of a resource plan is likely to increase as a result of meeting the GRM

criterion while having a high level of DSM. For example, let's look at FPL's RIM 526 MW resource plan. As noted above, it is projected to not meet the GRM criterion in the years 2020, 2021, and 2025. By adding more generation to the RIM 526 MW plan - specifically a 129 MW PPA in 2020, a 168 MW PPA in 2021, and increasing the PPA in 2025 by approximately 228 MW – one could create a new, fifth resource plan that still has 526 MW of DSM yet meets the GRM criterion in all years. But because this fifth resource plan would include an additional 228 MW of generation in 2025, the total RM would increase from 20.0% to 20.9% for that year.

Q. Were all four of these With DSM resource plans, the two that met the GRM criterion and the two that ignored this criterion, evaluated from the same economic and non-economic perspectives?

A. Yes.

VI. STEP 6 OF FPL'S PLANNING PROCESS: ANALYSES OF THE RESOURCE PLANS

Q. Please describe how the economic analysis of the Supply Only and With DSM resource plans are conducted.

A. The economic analyses of these resource plans addressed the years 2014 through 2054. A number of economic analyses are conducted and the results of these analyses are brought together. First, the P-MArea production costing model is used to develop projected annual fuel costs for the FPL system for

each resource plan. Annual variable costs for the new generation additions and system emission levels are also developed using this model. Using the projected annual emissions, annual environmental compliance costs are then developed.

Second, fixed costs (capital, fixed O&M, capital replacement, etc.) for the new generation additions in each resource plan are determined. Third, annual DSM administrative costs and incentive payments for the incremental DSM included in each resource plan are quantified in the process of developing the DSM portfolio using FPL's DSM linear programming (LP) optimization model.

Fourth, a projection of "other" FPL system costs not affected by the resource plans was determined. (Examples of these "other" system costs include costs for existing generating units, existing transmission and distribution facilities, existing buildings, staff, etc.) Fifth, a projection of "other DSM costs" for the Supply Only and With DSM resource plans was developed. These "other DSM costs" include costs not directly tied to any individual DSM measure, but which will be incurred as part of a DSM portfolio. (Examples of such costs include energy surveys and on-going bill credits to existing load management participants.)

Sixth, the impact of DSM energy efficiency measures in helping FPL address the Southeastern Florida generation-to-load imbalance was calculated. This consisted of projecting the extent to which the DSM energy efficiency measures in the DSM portfolio might potentially defer transmission expenditures that would otherwise be needed to bring electricity generated outside of the Southeastern Florida region into the region. Finally, the annual GWh reductions by which DSM reduces the annual number of GWh over which FPL recovers its costs are determined.

The above information is then used to calculate a levelized system average electric rate for each resource plan. This electric rate metric is used as the primary economic basis by which the resource plans, and the amount of DSM included in each resource plan, are evaluated.

Q. What were the results of the economic analysis of the resource plans?

A. The results of the economic analyses of the resource plans are presented in Exhibit SRS-11 which provides the projected levelized system average electric rate for each resource plan. In addition, Exhibit SRS-11 also states whether each resource plan will result in one group of customers subsidizing other groups of customers in regard to the resource plan's effect on electric rates. This important consideration is referred to as cross-subsidization of different groups of customers.

Q. Would you please discuss the results presented in Exhibit SRS-11?

A. Yes. The three conforming resource plans are first presented in order of their projected levelized system average electric rate ("system average electric rate"). The resource plan with the lowest projected system average electric rate is the RIM 337 MW plan. The Supply Only plan is projected to have the next lowest system average electric rate. The TRC 337 MW plan has the highest projected system average electric rate by a substantial margin.

Exhibit SRS-11 also indicates whether each resource plan will avoid the cross-subsidization of one customer group by another. In the absence of the RIM 337 MW plan, the Supply Only plan would avoid cross-subsidization because all customers "participate" when generation options are placed in-service. In addition, the Supply Only plan has the next lowest system average electric rate. However, the RIM 337 MW plan is projected to have an even lower system average electric rate than the Supply only plan so the RIM 337 MW plan best avoids cross-subsidization of customers and produces the lowest system average electric rate. Because the TRC 337 MW plan results in higher system average electric rates than either the RIM 337 MW or Supply Only plan, the TRC 337 MW plan will result in the cross-subsidization of customers. I will return to the issue of cross-subsidization later in my testimony.

At the bottom of this exhibit, projected system average electric rates and cross-subsidization information is also presented for the two resource plans that do not conform to FPL's GRM reliability criterion. As indicated from this information, both of these plans are projected to result in higher system average electric rates than either the RIM 337 MW plan or the Supply Only plan. In addition, neither of these two non-conforming plans is projected to avoid cross-subsidization.

Q. Why is it not appropriate to evaluate the five resource plans on the basis of the total costs of the plans?

A. An evaluation of system costs alone would provide incomplete information regarding direct economic impacts to FPL's customers when analyzing DSM options versus Supply options.

As discussed previously in my testimony, it is acceptable to conduct analyses of competing Supply options on a total cost basis (such as cumulative present value of revenue requirements) because in such a case a total cost analysis equates to an electric rate analysis. This is due to the fact that the number of GWh over which the system costs are recovered does not change when only Supply options are being evaluated. Therefore, the lowest cost plan will also be the lowest plan in terms of levelized system average electric rates.

However, when evaluating DSM options versus Supply options, or different levels of DSM options, the number of GWh over which the system costs are

recovered does change when considering the DSM options. Therefore, an evaluation of only total system costs in such a comparison of Supply versus DSM options, or different levels of DSM options, cannot determine which option results in the lowest electric rates that will be charged to all customers. One needs to account for the number of GWh over which the system costs will be recovered in order to determine the option that results in the lowest electric rates. FPL has used exactly this approach in its calculation of levelized system average electric rates for the five resource plans.

Q. How is the levelized system average electric rate for a resource plan calculated?

A. Exhibit SRS-12 presents the calculation of the levelized system average electric rate for one of the resource plans, the RIM 337 MW resource plan. The calculation consists of three basic steps. First, the projected annual revenue requirements and annual GWh served are used to calculate a projected system average electric rate for each year as shown in Column 9. Second, each of these projected annual electric rates is present valued and these present values are summed in Column 10. Third, an annual electric rate value is developed in Column 11 that, when held constant in each year, with these values present valued and summed, has an identical present value sum in Column 12 to that of the present value sum in the second step. This constant electric rate value is the levelized system average electric rate for this resource plan. Levelized system average electric rates for each of the other four resource plans were calculated in the same manner.

Q. Are the differences in the levelized system average electric rates between the three conforming resource plans presented in Exhibit SRS-11 meaningful?

A. Yes. The significance of these differences is perhaps most readily seen by determining the amount of additional cost that would need to be incurred to raise the levelized electric rate of 11.7412 cents/kWh for the RIM 337 MW plan to the levelized electric rate for another plan such as the TRC 337 MW plan's levelized electric rate of 11.7579 cents/kWh.

In terms of a one-time additional cost, the RIM 337 MW plan would have to incur an additional cost of approximately $296,000,000 in 2015, or of approximately $630,000,000 in 2024, in order to raise its levelized electric rate to match that of the TRC 337 MW plan. This latter calculation is presented in Exhibit SRS-13.

As evidenced by this example, the levelized system average electric rate differences are meaningful, and the RIM 337 MW plan's advantage is significant.

Q. Was a projection made of electric rates and customer bills for the 10-year Goal-setting period for each resource plan?

A. Yes. Exhibit SRS-14 presents the projected annual electric rates, and the projected bills corresponding to a usage of 1,200 kWh, for the three conforming resource plans for the years 2015-2025. (The results for the two

non-conforming sensitivity case plans that are based on DSM portfolios consisting of the full Achievable Potential DSM under the two screening paths are also presented.) Also included in this exhibit is the projection of the differentials in the customer bills between each With DSM resource plan and the Supply Only plan. The results of these projections can be summarized as follows:

- Higher electric rates and customer bills are projected for each year from 2015 through 2024 for each of the four DSM-based resource plans compared to the Supply Only plan which is projected to have the lowest electric rates and customer bills for each of the 10 years in the goals-setting period. This is due to the fact that although the four DSM-based resource plans will have reduced certain costs (such as fuel), DSM will not have avoided any large-scale Supply option addition during this time period. Conversely, the DSM additions will both reduce the number of GWh over which FPL's revenue requirements will be recovered and DSM administrative and incentive costs will have been incurred.
- Only in the year 2025, when the Supply Only resource plan adds a CC unit that is deferred by the four With DSM resource plans, does this picture change. All four With DSM plans are projected to result in lower electric rates in the year 2025 than with the Supply Only resource plan. The RIM 337 MW resource plan is projected

to have the lowest electric rates and lowest customer bills in 2025 of all five plans. Compared to the RIM 337 MW resource plan, the remaining With DSM plans' electric rates and customer bills are higher in 2025 than the RIM 337 MW plan (although lower in the year 2025 than the Supply Only plan).

In comparing the two conforming With DSM resource plans during 2015-2025, the RIM 337 MW plan is projected to result in the lowest electric rates and customer bills in each year. The TRC 337 MW plan is projected to result in the highest electric rates and customer bills in each year.

These results are expected. DSM additions typically put upward pressure on electric rates, and bills, in the years prior to avoiding/deferring a generating unit. This is typically seen in screening analyses of individual DSM measures. Also expected is that this near-term impact of placing upward pressure on rates and bills is minimized by DSM measures that survived the RIM screening test path. Conversely, the TRC screening test does not allow the consideration of two important cost impacts on electric rates and, because this screening test does not include all relevant DSM-related costs for a DSM measure, DSM measures that "pass" only the TRC screening test typically result in higher electric rates.

Q. Returning to Exhibit SRS-11, this exhibit presents information regarding whether the resource plans will avoid the potential for cross-subsidization of program participants by the general body of customers. Would you please discuss this further?

A. Yes. When a resource option, Supply or DSM, is selected, it will have an impact on FPL's electric rates that are charged to all customers and on the bills all customers will pay. The basic issue in regard to cross-subsidization is whether the impact of the resource selection on electric rates and bills will result in one group of customers subsidizing other customers.

For example, consider the case when FPL evaluates only Supply options. Because all customers on FPL's system are served by the Supply option if that option is chosen, all customers are "participants" in the selected Supply option. Electric rates and bills for all customers move in the same "direction"; either up or down from year to year compared to another Supply option that could be selected. Therefore, there is no subsidization of one group of customers by another group.

However, the same is not true for DSM options. With DSM options, customers have a choice to participate or not participate in DSM options for which they are eligible. Furthermore, customers cannot participate in DSM options they are ineligible for, or in measures which they may have already installed. This leads to an additional, and important, consideration of how

different groups of customers, participants and non-participants, are impacted when DSM options are selected. If the utility chooses a DSM option that places upward pressure on electric rates compared to another DSM option, the result will be the formation of two groups of customers: one group of "losers" who do not, or cannot, participate in the first DSM option and who face higher electric rates and bills, and one group of "winners" who can and do, participate in the first DSM option and, through reduced usage, reduce their bills (even though electric rates will have increased due to the first DSM option being offered by the utility).

This outcome is undesirable because one group of customers (the non-participants) subsidizes the other group of customers (the participants) through higher electric rates caused by the imposition of the first DSM option; i.e., there is a cross-subsidization of one customer group by another.

Avoiding this undesirable outcome is accomplished by accounting for the effect on electric rates when selecting DSM options. Accounting for this requires at least three important considerations.

Q. Please discuss what these three considerations are.

A. The first consideration is which DSM screening test is used to perform preliminary screening of DSM measures. Because the RIM screening test correctly accounts for all DSM-related cost impacts that will affect electric rates, it does a much better job of screening out DSM measures that are likely

to put upwards pressure on electric rates if those measures are implemented. Conversely, because the TRC screening test does not account for all DSM-related cost impacts that affect electric rates, certain DSM measures "pass" the TRC screening test that do not pass the RIM screening test. If these DSM measures are then incorporated into a DSM portfolio, that portfolio will result in higher electric rates. Non-participants in those DSM measures will pay higher bills due to the higher electric rates than if either the competing Supply option or RIM-based DSM had been chosen.

Therefore, the use of TRC-based DSM measures results in "winners" (participants in TRC-based DSM measures) and "losers" (all other customers) among a utility's customers. Thus the choice of the preliminary screening test used in DSM analyses can result in cross-subsidization among FPL's customers.

The second consideration is to match the amount, and the timing, of DSM MW additions to the utility's actual resource needs. This is important because much of DSM's net benefits are due to avoiding or deferring new generation additions that would otherwise be added. Only by matching, or "targeting," the DSM MW to the specific FPL resource need MW in specific years will generating units be efficiently avoided or deferred by DSM. In regard to meeting a specific annual resource need target, if too few DSM MW are planned, FPL will need to incur the cost of a Supply option to make up the

resource need shortfall. Conversely, if more DSM MW are planned than what is needed to avoid or defer generating resources, then unnecessary DSM costs for the excess DSM MW are incurred. In either case, DSM is not being efficiently planned and these additional costs will result in higher electric rates for FPL's customers.

The third consideration is to determine the optimum "mix" of DSM measures with which to meet the utility's annual resource needs. The preliminary economic screening of individual DSM measures is an important step, but in essence all it does is develop a list of DSM measures that survived a preliminary screening evaluation. What is missing at the end of this early screening step is an evaluation of which of the DSM measures should be selected, and in what annual amounts, to meet the utility's resource needs in the most efficient and economical way.

FPL accomplishes this optimization by using a linear programming (LP) approach to select DSM measures so that specific annual resource need targets are met most economically. One can correctly think of this as conducting a competition among all DSM measures to earn a role in FPL's DSM portfolio. This ensures that the most economically competitive DSM measures are selected for the portfolio.

Therefore, by FPL selecting DSM options using these three considerations, cross-subsidization of customers is avoided. This is shown in Exhibit SRS-11 by the fact that the projected levelized electric rate for the RIM 337 MW plan is the lowest of any of the plans and the projected levelized electric rates for the TRC plans are the highest. The RIM 337 MW DSM portfolio was developed using all three considerations just discussed while the TRC plans ignored one or more of these considerations.

Q. Would you please describe how the LP analyses of individual DSM measures are carried out in order to create a DSM portfolio?

A. Yes. The LP model evaluates all individual DSM measures that survived the preliminary screening paths, using the corresponding annual Achievable Potential MW for each DSM measure, to determine which combination of DSM measures meets an "objective function" after meeting all necessary constraints. The result is an optimized mix, or portfolio, of DSM measures that meet the constraints.

In these LP analyses, the objective function is to minimize the present value of the DSM-related net costs of a DSM portfolio that are applicable to the specific screening test in question, RIM or TRC. The DSM-related net costs are derived by first calculating all of the DSM cost impacts that are applicable to the specific screening test in question, then subtracting out certain system costs that will be avoided by DSM but which may vary from the analysis of one DSM measure to another. These system avoided costs represent a subset

of the potential benefits projected for a DSM measure and include: emission and fuel costs avoided by the kWh reduction aspect of a DSM measure, and transmission capital and O&M fixed costs that are avoided by the kW reduction aspect of a DSM measure. The LP's solution is the DSM portfolio that results in the lowest present value of these DSM-related net cost impacts while meeting applicable constraints on the solution.

Q. How would you summarize the economic analyses results?

A. Two results from the economic analyses stand out. First, the RIM 337 MW resource plan meets FPL's resource needs through 2025 while providing the lowest system average electric rates over the analysis period and the lowest electric rates of any of the With DSM-based resource plans for each year in the 2015-2025 time period. Second, the RIM 337 MW plan meets FPL's resource needs while avoiding cross-subsidization of one customer group by another.

These two factors combine to make the RIM 337 MW plan the best resource plan from an economic perspective.

Q. What different perspectives of the FPL system were considered in the non-economic analysis?

A. The non-economic analysis focused on two perspectives that address the years 2015-2025. The first perspective is a direct comparison of projected annual SO_2, NO_x, and CO_2 emissions for the FPL system for each of the resource plans. The second perspective is a direct comparison of projected annual FPL

system oil and natural gas usage for the resource plans. These analyses addressed both the three conforming resource plans and the two non-conforming resource plans.

Q. Would you please present the results of the non-economic analyses?

A. Yes. The results of the non-economic analyses are presented in Exhibits SRS-15 and SRS-16. These results can be summarized in two points.

First, there are only relatively small differences in regard to projected system emissions and system fossil fuel use among the five resource plans. Two examples demonstrate this.

In regard to projected system SO_2 emissions (in terms of thousand tons for SO_2 and NO_x, and in terms of million tons for CO_2) for the five resource plans, Exhibit SRS-15 shows that for the year 2019 (in the middle of the DSM Goals-setting time period), the projected SO_2 system emissions for that year for the five resource plans are all 8.1. A similar result is projected for the year 2024 (the last year of the DSM Goals-setting time period) with values varying only slightly: from 6.6 to 6.7. Similar narrow ranges among the five resource plans are also projected for both NO_x and CO_2.

In regard to projected system oil and natural gas usage levels (measured in millions of mmBtu) presented in Exhibit SRS-16, there are again only relatively small differences between the projected fuel usage levels for the

five resource plans. The projected results for the year 2019 range vary only slightly: from 2.4 to 2.5 for oil, and from 577.4 to 580.5 for natural gas. Only slight variations are again projected for the year 2024: from 1.6 to 1.8 for oil, and 509.1 to 515.6 for natural gas.

Q. Do Exhibits SRS-15 and SRS-16 provide any other important information regarding the FPL generation system and the potential impact of DSM resources?

A. Yes. There are two other important pieces of information that are either provided by these exhibits, or which should be kept in mind when considering the results shown in these two exhibits.

The first of these is that, by looking at the projected annual system emissions from 2015 through 2025 in Exhibit SRS-15, it is apparent that FPL's generating system is projected to steadily lower FPL's system air emissions over this time period. This is projected to occur despite continued customer growth. For example, for the Supply Only resource plan, the projected SO_2 values decrease from 11.6 in 2015 to 4.8 in 2025. The projections for the Supply Only resource plan were similar for NO_x, decreasing from 8.8 (2015) to 5.2 (2025), and for CO_2, decreasing from 46.0 (2015) to 39.7 (2025).

Projections of system oil and natural gas usage levels for the Supply Only plan show similar results of decreasing fuel usage levels. Again, this is projected to occur despite significant customer growth. The comparable

projections for the Supply Only resource plan for oil usage are: 7.4 (2015) decreasing to 1.3 (2025), and for natural gas: 544.7 (2015) decreasing to 531.7 (2025).

These projected trends for the Supply Only resource plan are due to continued fuel-efficiency gains in how FPL's generating system utilizes fossil fuels and the use of cleaner fuels including the planned addition near the end of the 10-year Goals-setting period of the Turkey Point 6 & 7 nuclear units.

Therefore, FPL's customers will benefit from projected decreases in system fuel usage and emissions regardless of whether the Supply Only or With DSM resource plans are implemented. None of the four With DSM plans will significantly increase the improvements in system fuel and system emissions that are projected to be realized by continuing efficiency enhancements of FPL's generating system.

Q. What is the second important piece of information regarding the results shown in Exhibits SRS-15 and 16?

A. The second, and perhaps the most important point in summarizing the results of the non-economic analyses, is to note that the economic impacts of the projected fuel usage and SO_2 and NO_x emissions for each of the five resource plans have already been accounted for in all of the economic analyses discussed previously. Thus, whatever the differences are between these plans in regard to these emissions and fuel usage (and these differences are

relatively slight as discussed above), the economic impacts of these differences have already been accounted for in the economic analyses.

Q. Based on these results, which DSM portfolio should be the basis for FPL's DSM Goals?

A. For the reasons discussed above, the RIM 337 MW portfolio should be the basis for FPL's DSM Goals for the 2015-2024 time period. FPL witness Koch will present a breakdown of this 337 MW DSM portfolio into annual Summer MW, Winter MW, and GWh contributions in his direct testimony. In addition, his testimony will further break down these contributions by residential and commercial/industrial customer categories.

VII. RESOURCE PLANNING PERSPECTIVES REGARDING FPL'S PROPOSED DSM GOALS

Q. The 337 MW (Summer) DSM Goals FPL is proposing in 2014 are lower than the 664 MW (Summer) that FPL proposed as its DSM Goals in 2009. Why do the current resource planning analyses led to lower proposed Goals?

A. The primary reason is that utility DSM resources are now projected to be significantly less cost-effective compared to generation resources than has been the case in the past. There are a number of factors that each contribute to DSM being less cost-effective now than was the case in the last DSM Goals docket in 2009. A few of the more significant factors include the following:

1) significant increased impacts of energy efficiency codes and standards;

2) lower forecasted fuel costs;

3) increased FPL generating system efficiency;

4) changes in forecasted CO_2 compliance costs; and,

5) changes in projected firm gas transportation incremental volumes and the associated costs.

Q. Would you please comment on each of these five factors?

A. Yes. My comments on each of these factors are as follows:

1) Significant increased impacts of energy efficiency codes and standards:

In 2009 FPL's customers were projected to receive approximately 1,255 MW (Summer) of peak demand reduction during the 10-year period from 2010 through 2019 (the last year of the then 2010-2019 Goals-setting period) due to codes and standards. In comparison, FPL's customers are now forecasted to receive approximately 1,823 MW (Summer) of peak demand reduction during the 10-year period from 2015 through 2024 due to codes and standards. In addition, the projected impact from codes and standards on energy use for the current goals-setting period is also very large: 5,547 GWh of reduced energy usage. As discussed in FPL witness Koch's direct testimony, this change in the impact of codes and standards substantially lowered the technical potential "starting point" for the Goals analyses and directly affected specific electrical equipment – such as residential air conditioners – that have long been a mainstay of prior FPL DSM Goals filings (and FPL's DSM programs.) As a

result, the Technical Potential, and subsequent Achievable Potential, for DSM have been lowered.

2) Lower forecasted fuel costs:

Current forecasted fuel costs are much lower than those forecasted in 2009. This can be seen by comparing the 2009 and current forecasted costs ($/mmBtu) for natural gas for three specific years within the current 10-year Goal-setting period (2015, 2019, and 2024):

Year	2009 Forecast	Current Forecast
2015	$9.64	$4.26
2019	$12.63	$6.15
2024	$14.39	$7.34

As shown from these values, natural gas prices are currently forecast to be approximately only 50% of what they were forecast to be in 2009 when FPL last filed for proposed DSM Goals. Lower forecasted natural gas costs are a very good thing for FPL's customers, but lower fuel costs also result in lower potential fuel savings benefits from the kWh reductions of DSM measures. Lower kWh reduction-based benefits result in two general impacts in regard to DSM analyses: (i) fewer DSM measures survive the preliminary economic screening, and (ii) lower incentive payment amounts are available to those

DSM measures that survive the screening. Both of these impacts result in lower DSM Achievable Potential values.

3) Increased FPL generating system efficiency:

FPL's generating system has steadily gotten more efficient in regard to its ability to generate electricity using less fossil fuel. One indication of this is the metric of system average heat rate for FPL's fleet of fossil fueled generating units. In the year 2001, this heat rate was 9,635 Btu/kWh. By 2012, this heat rate had decreased to 7,669 Btu/kWh which represents a 20% improvement in generating efficiency. In other words, it took 20% less fossil fuel to generate the same number of kWh in 2012 than it did in 2001. This is a truly significant achievement for any utility system, but particularly so for a generating system as large as FPL's. This improvement in system heat rates from 2001 to 2012 was driven primarily by the addition of modern CC units (such as at the Martin, Manatee, West County, and Turkey Point sites).

In regard to the most recent DSM Goals analysis year of 2009, the fossil fueled generation heat rate in that year was 8,232 Btu/kWh which improved to 7,669 Btu/kWh by 2012. Additional significant improvement in the system heat rate of the fossil fueled generating unit fleet is also projected to result from the on-going modernization of existing plant sites (such as at Port Everglades) as old steam-fired generating units are replaced with modern CC

units and by the additional nuclear capacity recently added at the Turkey Point and St. Lucie sites through the successful capacity uprates project.

In 2009, the modernization of the Port Everglades site was not yet included in FPL's resource plan. Therefore, the additional system fuel efficiency gains from that modernization project were not assumed in the 2009 DSM Goals analyses work. Neither was the full amount of additional nuclear capacity actually delivered from the nuclear uprates project (approximately 520 MW, or 30% more, instead of the then-assumed 399 MW) assumed in the 2009 DSM Goals analyses. All of these actual and projected supply side efficiencies have been fully incorporated into FPL's resource planning process and are accounted for in the analyses discussed in my testimony.

The improvements in generating system efficiency affect DSM in much the same way that lower forecasted fuel costs do: the potential fuel savings benefits from the kWh reduction impacts of DSM have been further reduced. Both lower forecasted fuel costs and greater generating efficiency serve to lower marginal fuel costs that DSM's kWh reduction can remove from FPL's system. Both of these factors result in fewer DSM measures surviving the preliminary economic screening and in lower incentive payment amounts for those DSM measures that survive the screening. In turn, these two impacts result in lower DSM Achievable Potential values.

4) Changes in forecasted CO2 compliance costs:

In 2009 FPL used its then current forecast of CO_2 compliance costs in its DSM Goals analyses. The CO_2 compliance costs forecasted in 2009 were significantly higher than the current sensitivity case forecast of these costs. This can be seen by comparing the 2009 and current forecasted CO_2 compliance costs ($/ton) for the same three specific years discussed above (2015, 2019, and 2024):

Year	2009 Forecast	Current Forecast
2015	$17	$0
2019	$25	$0
2024	$39	$17

While lower forecasted CO_2 compliance costs are again a good thing for FPL's customers, lower compliance costs also result in lower compliance cost savings benefits from the kWh reductions of DSM measures. This again results in fewer DSM measures surviving the preliminary economic screening and in lower incentive payment amounts for those DSM measures that survive the screening. In turn, this results in lower DSM Achievable Potential values. (In addition, the current forecast of low CO_2 compliance costs also explains why there was relatively little difference between the number of DSM measures that survived the "w/o CO_2" and "w/CO_2" preliminary screenings discussed earlier.)

5) Changes in projected firm gas transportation incremental volumes and the associated costs:

In regard to projected firm gas transportation incremental volumes and the associated costs projections, there has also been a significant change in these projections from projections in 2009. In 2009, the assumption was that each new CC unit added to FPL's system would need sufficient new firm gas transportation volume to fully fuel the new CC capacity. However, the amount of committed firm gas transportation volume that has already been committed to in association with the new gas pipeline, 400,000 mmBtu/day beginning in May 2017 and an additional 200,000 mmBtu/day beginning in May 2020, means that smaller incremental volumes of new gas will be needed for new CC capacity in the years immediately following those two additions. Furthermore, these smaller new gas volumes will not be needed as soon as the new CC capacity goes in-service, and the $/mmBtu cost of the additional firm gas transportation has also decreased from 2009 projections. Consequently, the projected total cost of firm gas transportation that is avoided or deferred when the kW reduction aspect of DSM avoids or defers a new CC unit has significantly decreased from what was assumed in 2009. These effects are good for FPL's customers, but they also lower the economic competitiveness of DSM options which, in turn, leads to lower DSM Achievable Potential values.

Each of these five factors discussed above is good for FPL's customers because they lower FPL's costs and electric rates and/or enhance system reliability. In addition, all of these five factors contribute to lowering FPL's proposed DSM Goals amounts primarily because they lower DSM cost-effectiveness by lowering costs that otherwise could have potentially been avoided or deferred by DSM measures.

Q. From a resource planning perspective, are FPL's proposed DSM Goals reasonable?

A. Yes. The proposed goals are reasonable for a number of reasons. First, FPL is proposing goals for DSM resources that will result in the lowest electric rates. Second, the proposed DSM goals account for the 10% GRM reliability criterion that will maintain the reliability of FPL's system.

Third, FPL's customers are projected to have a very large amount of energy efficiency delivered to them during the 2015-2024 time period. The amount of energy efficiency projected to be delivered through codes and standards, 1,823 MW, and the 337 MW proposed as FPL's DSM Goals, will result in a total of 2,160 MW (Summer) of energy efficiency/DSM being delivered to FPL's customers over the 10-year Goals period. This is an even greater total amount of energy efficiency/DSM than was projected in 2009 when 1,919 MW were projected: 1,255 MW from codes and standards and 664 MW from FPL's proposed Goals. Therefore, 241 MW more (= 2,160 - 1,919) total energy efficiency/DSM, or approximately 13% more MW, are projected to be

delivered to FPL's customers during the next Goals period than was projected/proposed for the last Goals period. The delivery "mix" between codes and standards and utility DSM has changed, but the total energy efficiency/DSM projected to be delivered is substantially greater.

Fourth, as discussed above, many of the reasons why FPL's proposed DSM Goals are lower than the goals proposed in 2009 are due to reasons that result in lower costs and electric rates for FPL's customers: lower fuel costs, lower CO_2 compliance costs, increasingly greater efficiency with which FPL generates electricity, greater contributions from lower cost, zero emission nuclear fuel, etc.

Fifth, it is important to note that one should not think of the term "energy efficiency" in regard to electricity solely in terms of using electricity efficiently or using less electricity. An equally important component is generating electricity efficiently. As discussed earlier, FPL has dramatically improved the efficiency with which it generates electricity.

For all of these reasons, I believe that FPL's proposed DSM goals are both reasonable and desirable.

Q. Does this conclude your direct testimony?

A. Yes.

BY MS. CANO:

Q Did you also sponsor exhibits to your direct testimony?

A Yes.

Q And those consist of SRS-1 through SRS-16?

A Yes.

MS. CANO: I would note that these have been premarked for identification on the comprehensive exhibit list as Exhibits 2 through 17.

BY MS. CANO:

Q Would you please provide a summary of your direct testimony to the Commission?

A Yes, I will. Good evening, Chairman Graham and Commissioners. My testimony is a lengthy one, but I'll try to summarize it using three main points.

Main point number one: Background. FPL's proposed DSM goals are lower than in 2009. This is not only reasonable but should be expected. And there are two primary reasons for this. Number one, DSM cost effectiveness, particularly for DSM kilowatt hour savings, has significantly decreased compared to 2009 for several reasons. Forecasted natural gas costs have dropped by 50 percent. Forecasted annual CO2 costs start later and are lower.

And, specifically for FPL, its generating system is more efficient than forecasted in 2009. These lower

system costs are a very good thing for FPL's customers.

The second point is that the protected impact of Federal and State energy efficiency codes and standards is much greater than in 2009. We now project 18 -- 1,823 megawatts of energy efficiency over the ten-year period, which is about 50 percent higher than what was projected in 2009. In addition, 5,547 gigawatt hours of energy reduction are also projected from the codes and standards.

As a result of these two factors, fewer DSM measures are available to be addressed by utility DSM and fewer DSM measures are projected to be economic. And for those measures, lower incentive levels can be justified only.

Main point number two: Overview of the analysis. Our proposed goals are based on a rigorous six-step IRP analysis process, and my testimony discusses four of these steps. And the key points there include: Our proposed goals are based on FPL's most recent resource planning process, as required by Commission rule, and this integrated resource planning process utilized updated forecasts and assumptions.

850 individual DSM measures went through preliminary economic screening. Two screening paths were used: A RIM-based and a TRC-based path. The DSM measures that survived each screening path and their associated maximum incentive payment were identified.

Based on FPL's projected resource needs and the

achievable potential megawatt for each surviving measure, five resource plans were developed. A supply-only plan assumed no incremental DSM. Two plans, the 526 megawatt RIM plan and the 576 megawatt TRC plan, utilized the full DSM achievable potential under each of the two screening paths, without regard for FPL's annual resource needs.

Two other plans, a RIM 337 megawatt plan and a TRC 337 megawatt plan, used an optimized selection of DSM measures to directly address FPL's projected needs. Then comprehensive FPL system analyses of these five resource plans were performed using a consistent set of economic and non-economic metrics.

In main point number three: The results of the analyses. And these results were very clear. In the economic analysis the RIM 337 megawatt resource plan is the clear winner for FPL's customers. And there are four reasons for this.

Of the four plans with incremental DSM, this plan results in the lowest annual electric rates for FPL's customers for the ten years goal-setting period. It also results in the lowest long-term levelized system average electric rates for all five resource plans. It meets all of FPL's reliability criteria, thus best ensuring reliable service to FPL's customers and it eliminate unnecessary cross-subsidization of DSM participants by non-participants.

In the non-economic analyses there were no significant differences between the five resource plans. Thus the RIM 337 megawatt plan was identified as the best of the five resource plans for FPL's customers, and FPL is proposing that its DSM goals be set at 337 megawatts.

Finally, it is worth noting that FPL's customers are now projected to receive a total of more than 2,100 megawatts of emergency efficiency over the ten-year goal period from the combination of FPL's proposed goals and codes and standards. This value is 240 megawatts more than what was projected from the combination of goals and codes and standards in 2009. Thank you.

MS. CANO: We tender the witness for cross.

CHAIRMAN GRAHAM: Thank you very much. OPC?

MR. SAYLER: No questions.

CHAIRMAN GRAHAM: Department of Agriculture?

MR. HALL: No questions.

CHAIRMAN GRAHAM: NAACP?

MR. DREW: No questions.

CHAIRMAN GRAHAM: PCS Phosphate, no questions. FIPUG?

MR. MOYLE: Questions.

CHAIRMAN GRAHAM: Charge ahead.

CROSS EXAMINATION

BY MR. MOYLE:

Q Good evening, Mr. Sim.

A Good evening.

Q I want to talk to you a little bit about the free rider issue and the screen issue. And I don't really think that we need to reference your testimony. It's in your testimony, the notion of the screening FPL uses and the concept of free ridership, correct?

A That's correct.

Q And am I correct that -- that if you do not set the years of payback screen at the right number -- you know, FIPUG is saying it should be three, maybe four, FPL is saying it should be two, correct?

A Yes.

Q Okay. And FPL has historically used two, is that correct?

A That's correct.

Q Okay. But really, isn't the policy issue that underlies that whether, if you don't set it at the right level, you have cross-subsidies, is that right?

A Yes. I think it's generally recognized that free riders exist. We're required by the Commission rule to address free riders, and we've chosen what we think is a reasonable and direct way to address free riders so that we are not paying administrative costs and incentives to customers who would implement DSM measures anyway.

Q Okay. And were you here when Mr. Deason took the stand earlier today?

A No, sir, I was not in the room.

Q Okay. Have you reviewed his testimony in this case?

A Sometime back I did, yes.

Q Okay. I'll represent to you that he had an exhibit that -- as I think it was testified to -- it showed a possible three-year screen. Deason Exhibit Number 2, are you familiar with that?

A A general recollection of it, yes.

Q Okay. You would agree, would you not, that that exhibit constitutes evidence in this proceeding, empirical evidence in this proceeding?

A I presume that it would, yes.

Q And can you tell -- can you just explain why, as a matter of policy, you don't seek cross-subsidies when setting these goals?

A I would answer by saying it's not so much that we seek cross-subsidies, we seek to avoid unnecessary cross-subsidies, when possible. And certainly in this case when selecting resource options, we think it is possible, through the proper approach, to minimize or eliminate unnecessary cross-subsidies when selecting resource option A versus resource option B.

Q And there was discussions -- I mean, part of the screening process is whether it's a large industrial who might be subsidizing someone or a low income person who might be subsidizing something. At the end of the day, you don't want subsidies at all, correct? That's the objective?

A We -- again, I don't believe, in this docket, the issues that we're discussing address any subsidy issues or cross-subsidization other than one, and that is, is there an unnecessary cross-subsidization from choosing certain DSM measures. And we certainly seek to minimize or eliminate that by the way that we develop and propose DSM goals.

Q And in your answer a key component of seeking to achieve that objective is the year screen that is applied, is that correct?

A That is the tool we use, yes.

Q With respect to whether the company has a way of knowing whether people are seeking to employ energy efficiency measures -- you know, currently it's a two-year screen, but there was a discussion about how could you measure people that are under a two-year screen. Isn't the answer that you really can't measure people that you don't have contact with that seek your assistance in implementing energy efficiency or demand-side management measures?

A In my opinion I think it would be very difficult to get that evidence directly. In theory, one could approach

free riders in a different way. If one knew, for example, that a particular DSM measure -- and we'll use just arbitrarily selected numbers -- that one out of every ten customers was going to be a free rider, you could go into your analysis and you could say, all right, I'm going to assume that all ten customers we pay an admin cost for and we pay an incentive for, but I'm going to reduce the kW and kWh reduction by one-tenth for each of those ten customers to account for the fact that one of them is a free rider and gives me nothing above what I would give with no program.

The problem is, is that we simply do not have that data for all of the 850 measures that we screened. And in fact there's no way we could get that data because we would want to do it based on our service territory, and the vast majority of those 850 measures are measures that we have never implemented, never utilized, most of them have never passed cost-effectiveness screening, so in theory it would be one way to do it; particularly, you can't get there from here.

So one has to go in indirectly through another means, and we've come up with the two-year payback screen as a reasonable way in which to judge the economic attractiveness of the DSM measures, and we've selected the two-year payback screen for that.

Q And I guess, just to maybe ask it a little bit

of a different -- in a different way, if I was an FPL customer -- I used to be, many years ago. But if I was, and my electric usage went down, your information would be Moyle's electric usage went down this month.

You wouldn't have information as to whether I went out and bought an energy-efficient appliance for which the payback was less than two years, or whether we made adjustments to the thermometer or whether we had kids that were moving out of the house and we didn't have to heat and cool their rooms -- I mean, you have no way of knowing why someone's usage went down in the situation I described, correct?

A That's correct.

Q I mean, the Smart meters are smart, but they're not that smart, right?

A To my knowledge, no.

Q Okay. And if this Commission were to see fit -- I mean, really, it's an economic decision, largely, isn't it, whether you do, you know, a two-year screen or a three-year screen? It's a tool that's used that's premised upon economics, correct?

A It's based, at least in part, on economics, yes.

Q And then staff in this case asked for the sensitivities on a one-year screen, a two-year screen, which you do, and then a three-year screen, is that correct?

A That's correct.

Q And do you know part of that was to understand the impacts of how the programs would look in the various payback models?

A I would agree with the sole exception we weren't looking at programs at that time, we were looking at DSM measures.

Q And this may not be a fair question, but you participate in the FPL rate cases, correct?

A No, sir, I have not.

Q You're not?

A Not in rate cases.

Q Okay. All right. Are you familiar with the return on equity issue that is talked about in rate cases?

A In general turns, yes.

Q Do you know what FPL's return on equity is, presently?

A Off the top of my head, at this moment, no.

Q Between ten and 12?

A Yes.

Q Would it be fair, when looking at the economics of the free ridership, you know, can you say, well, you know, 10 to 12 percent return on equity for a utility that's investing its capital and getting a return -- you know, can we assume a 10 to 12 or a 20 percent return is reasonable for an informed

consumer? Could you make that comparison, given that the model is one based on economics?

A I think, by and large, that's what the exhibit in Mr. Deason's testimony tries to show, the attractiveness of the return on investment for these energy efficiency measures.

Q And you're never going to achieve 100 percent market penetration just because some people, you know, will not get off the dime and, you know, necessarily act in their economic interests, correct? Or for a whole bunch of other reasons: They may not have the capital to do it at this point.

So, you know, while you use your best effort, it's not a perfect instrument that will achieve 100 percent market penetration, correct?

A That's correct. As long as DSM measures and programs are voluntary, you'll never achieve 100 percent.

Q Okay, earlier I -- there was some questions about whether FPL was seeking to increase its return on equity if it met its goals. And I just want to make sure that we're clear on another topic.

In this case, FPL is not asking this Commission to specifically and expressly rule on its GMS proposal, correct?

A I'm sorry, GMS?

Q I might have gotten that wrong.

MS. CANO: Mr. Moyle, I think you're referring to the GRM.

MR. MOYLE: Thank you.

BY MR. MOYLE:

Q What does GRM refer to?

A It's an acronym for generation-only reserve margin.

Q And you attached an excerpt to your testimony, didn't you?

A It would be Exhibit SRS-2.

Q Right. And it's an excerpt from what you filed in the Ten-Year Site Plan, correct?

A Yes.

Q Okay. And you're aware that the PSC has a rule on reserve margin, correct?

A Have a rule on -- well, it's an approved stipulation. I'm not a lawyer, so I don't know if it falls under the category of a rule in regard to total reserve margin for the IOUs.

Q Okay. And there's -- so you're aware there's a stipulation. Are you aware whether there's also a rule that addresses generation reserve margin?

A I'm not aware of one, no.

Q Okay. But just to be clear, this proceeding, you're not asking this Commission to delve into the details

of FPL's proposed generation-only reserve margin and make a decision on whether that's a good idea, a bad idea, or not, correct?

A I would agree with that. We have identified it as one of our reliability criteria. We've explained the rationale for it and we have used it in our analyses.

Q Sure, I understand. And FIPUG may have some questions about this. But I just want to make sure we're on the same page that this isn't the time of day or the proceeding in which we're going to get into the underlying policy of that issue, that that's not front and center in this proceeding, correct?

A I would not disagree with you.

Q Okay. I'll take that as a yes, given the Commission's instruction.

A Yes.

MR. MOYLE: And with that, I don't have any further questions. Thank you.

CHAIRMAN GRAHAM: Thank you, Mr. Moyle. Walmart?

MR. WRIGHT: No questions, Mr. Chairman.

CHAIRMAN GRAHAM: Sierra Club?

MS. CSANK: Mr. Chairman, I do have questions.

CROSS EXAMINATION

BY MS. CSANK:

Q Hello, Mr. Sim.

A Good evening.
Q How are you?
A I'm fine, thank you.
Q Good to hear. Mr. Sim, is it true that FPL's customers are generally better off in terms of energy savings when they participate in FPL's DSM programs?
A If the program makes sense for an individual, then I would agree that participant will be better off participating in the program.
Q Going back to my question, and the premise is a participant, will that -- if someone is a participant in an FPL DSM program, will that individual be better off as a result of participating?
A I would presume yes, otherwise the customer would not have participated.
Q Thank you. And do FPL's over four million customers pay for supply-side resources through rates and bills?
A Yes.
Q And it is your testimony that some of those supply-side resources can be avoided or deferred through DSM programs, correct?
A Future supply-side options may be deferred or avoided by DSM programs, as we are discussing in this docket.
Q Thank you. And FPL's proposed DSM goals reflect

RIM test results?

A Among other things, yes.

Q Can you explain how they reflect the results of the participant test?

A Yes. In the screening for DSM measures the participant test is utilized in step three of the screening -- of the preliminary screening process.

Q Can you elaborate on that and specifically by explaining whether any measures that pass the RIM test -- sorry -- that pass the participant test were eliminated by the RIM test?

A Yes, in step three we look to see what incentive needs to be paid for those measures that do not already pass the participant test. We then assign an incentive to those measures so that the participant test benefit to cost ratio is 1.0. And then we look to see, with that incentive, does the measure fail the RIM test. And if it does, that measure is eliminated at that point.

Q Do you recall how many such measures there were that passed the participant test but were eliminated by the RIM test?

A In Exhibit SRS-5, we show the results of step three which reads number of DSM measures removed after also accounting for incentive payments needed to bring the participant test ratio up to 1.0. We had 123 measures that

did not survive at that step.

Q So just to be clear for the record, 123 measures would have passed the participant test but were eliminated at step three because they did not meet the RIM test?

A That's correct. And the rationale for that is, even though it would have been cost effective or at least break even for the participants at 1.0, it was not cost effective for the general body of ratepayers, because electric rates would have gone up.

Q Let's explore the converse of that. Were there any measures that didn't pass the participant test but passed the RIM test?

A Repeat, please.

Q Sure. My question was, were there any measures, of the 850 that were reviewed, that didn't pass the participant cost test but did pass the RIM test?

A I think the answer is no because it wasn't looked at that way. We were trying to figure out what incentive would get the participant to a break-even point and then see if it would fail the RIM test. So that was the direction the analysis took.

Q Okay, but isn't it your testimony that FPL's proposed goals reflect participant -- the participant test and the RIM test?

A Yes.

Q But if measures that pass the participant test were all eliminated at the RIM test point, then effectively the results of the participant test are nil in terms of the proposed goal?

A Disagree. The measure has to pass both the RIM test and the participant test. If either one of them had failed, then that measure would have been eliminated.

Q I understand. Thank you. So help me understand how FP&L has accounted for the benefits to participants in the proposed DSM goals.

A All of the measures that survived and went into the achievable potential calculation are those that have passed both the participant test and the RIM test. And on the TRC screening path they will have passed both the participant test and the TRC test.

Q In terms of a numeric reflection of the savings, the bill savings or other cost savings that participants in these measures will enjoy, where can we find that in the record?

A Repeat the question, please.

Q In terms of the participant benefits of FP&L's programs, where in the record do we see how participants in your programs are better off? How is that quantified in the record?

A We're not discussing programs in this filing.

Q In terms of goals.

A In terms of goals, in interrogatories we have provided the screening step-by-step the results of measures that passed. I think you would find it in those interrogatories.

Q Thank you. Moving back to the two-year payback screen and the rationale behind using that particular screen, can you remind us of the examples of the constraints of the types of barriers that might impede rational economic behavior among Florida's -- FP&L's consumers?

A I'm afraid Mr. Koch would have been the better witness for that.

MS. CSANK: I see. That concludes my questions. Thank you.

CHAIRMAN GRAHAM: Thank you. SACE?

CROSS EXAMINATION

BY MR. GUEST:

Q Good afternoon, Dr. Sim.

A Good evening.

Q I'd like to explore some of the issues we talked about earlier. And I'm going to go through some measures and explore how they were treated in your analysis. And let's start first with a hot water heater blanket. Can you tell us what that is? It's just a blanket you put around your hot water heater and you put a piece of tape on it to hold it on,

isn't that right?

A I'll go with that answer, yes.

Q And that's treated as RSF measure 408 on your table. I'd like to bring up FPL's answer to Sierra Club's First Interrogatory Number 18, attachment three, tab three. We're going to be referring to this repeatedly.

A Could you repeat that, please?

Q This is Florida Power and Light's response to Sierra Club's First Interrogatories, Interrogatory Number 18, attachment three, tab three.

CHAIRMAN GRAHAM: We'll call this Exhibit 156.

(Exhibit 156 marked for identification.)

BY MR. GUEST:

Q I'd ask you to turn to the last page of that, which is -- I'm sorry -- oh, I'm sorry, I'll wait. Ready?

A Yes.

Q What I see here on page 21 of 22, the third row from the bottom says RSF 408, water heater blanket. Do you see that?

A Yes, sir.

Q That's the code. Okay, so let's see how that code gets dealt with. Now, first, these things cost about $20, don't they?

A I don't know.

Q Okay, let's turn, then, to Duke's Response to

Sierra Club's First Request for Production of Documents, number 18, tab 13.

A I'm sorry, Duke's response?

Q To Sierra Club's First Request for Production of Documents, number 18, tab 13.

MS. CANO: I'm going to object to a line of questioning on a different utility's discovery responses.

MR. GUEST: It goes to the exact question.

CHAIRMAN GRAHAM: One more time?

MR. GUEST: This goes to the question directly of simply what they cost. This is the sworn answer of another party to the case. It's relevant to the case.

CHAIRMAN GRAHAM: Your question was based on Duke's response.

MR. GUEST: That's correct.

CHAIRMAN GRAHAM: I agree with her objection.

MR. GUEST: So you're excluding that evidence?

CHAIRMAN GRAHAM: You want to ask a different question?

MR. GUEST: Well, the question is, I'm trying to establish that the water heater blanket costs $20, that's all.

MS. CANO: We can assume as a hypothetical for purposes of his question the hot water blanket costs

$20.

MR. GUEST: Okay, assume that as a fact.

CHAIRMAN GRAHAM: Okay, we'll stipulate.

BY MR. GUEST:

Q Okay. So, now, they pay back in about eight months, then, if it's a $20 investment, isn't that right?

A I'd have to do the math to go through the calculation.

Q All right. Well, I need to turn again to Duke's answer to the Sierra Club's Request for Production of Documents.

CHAIRMAN GRAHAM: It's going to be the same objection. You need to -- if you want to ask questions of Florida Power and Light, you need to questions that are specific to Florida Power and Light.

MR. GUEST: Well, these are the questions I'm talking about -- I understand what you're saying. The question is not whether Florida Power and Light's blankets cost that, it's how much those blankets cost. That's the issue. I'm not trying to -- I'm not trying to prove something that they do, I'm trying to prove a fact separate from that.

CHAIRMAN GRAHAM: I understand that. Ask your question differently.

BY MR. GUEST:

Q Okay. Do you know whether Duke concluded that the payback was eight months on those measures, on the hot water heater blanket?

CHAIRMAN GRAHAM: Once again, ask your question differently. Don't refer anything to Duke.

BY MR. GUEST:

Q Okay. If I showed you that these hot water heater blankets cost about $21 at Lowe's, would that help you decide how much they cost?

A Yes.

Q Okay. Let me show you what's been marked, then, as exhibit -- will be marked as exhibit --

CHAIRMAN GRAHAM: That will be 157.

MR. GUEST: 157, that one right there.

(Exhibit 157 marked for identification.)

BY MR. GUEST:

Q Okay, do you see that?

A Yes.

Q You see it costs $21.57. Now, let me turn to another document here. Would your opinion be aided if you saw what the Department of Energy concluded about the cost effectiveness of water heater blankets?

A I'm sorry, can you --

MS. CANO: I'm sorry, his opinion of what? I've lost sight of the question.

MR. GUEST: The cost-effectiveness of hot water heater blankets.

MS. CANO: So the question is whether his opinion of cost-effectiveness would change --

MR. GUEST: Whether it would help him, help his testimony about what the cost-effectiveness is.

CHAIRMAN GRAHAM: I don't understand the question.

MR. GUEST: The question is if you refer to the Department of Energy website.

CHAIRMAN GRAHAM: Okay.

MR. GUEST: That's a document I'm fixing to show him. If you referred to that, would that help you decide what the cost-effectiveness was.

CHAIRMAN GRAHAM: You said you're showing him a Department of Energy website --

MR. GUEST: That's what I'm -- the question is would that help him. So I'll just show it to you. This will be 158.

CHAIRMAN GRAHAM: Yes.

(Exhibit 158 marked for identification.)

BY Mr. GUEST:

Q Okay, I'd like you to turn to the second page. I guess it's the first page -- the second page after the cover. Do you see this page?

A In the upper right-hand corner, page one of five?

Q Two of five. It shows that it pays back in about a year?

A I'm sorry, I don't see that on this page.

Q Do you see that page?

A I can barely see it.

Q Okay, it's page two of five.

A Two of five.

Q Upper right-hand corner, it says two of five. Are you with me?

A Yes, I'm on that page.

Q Okay, and so the first word in the paragraph is just?

A Just like insulating your walls.

Q Okay. And then, if you go to the second to the last line, it said, should pay for itself in about a year. Do you see that?

A Not yet.

Q The bottom of the first paragraph?

A Ah, yes, should pay for itself in about a year.

Q Okay. All right. So that's a measure that's affordable for low income ratepayers, isn't it?

MS. CANO: Before we get too far past this, I would like to lodge an objection at this point in time. To the extent this is being offered to establish the cost-effectiveness of a measure, it's hearsay, and it

has nothing to do with the cost-effectiveness evaluations that were conducted by Dr. Sim on every measure in FPL's service territory.

MR. GUEST: I submit that that's proper impeachment evidence to help the witness to answer the question. And he doesn't dispute that the DOE website is a source that -- it's an authoritative source that can be used for this.

CHAIRMAN GRAHAM: Well, you're just going on a fact saying that this is something you gleaned off of DOE's website.

MR. GUEST: Well, I --

CHAIRMAN GRAHAM: And the objection is there's no documentation, no energy -- excuse me -- engineering analysis or anything else in here other than the fact that they say that's what it is.

MR. GUEST: Well, that's right, but that's an authoritative source under -- under the rules of evidence. Isn't that an authoritative source? You agree about that, don't you, for the kind of information that you use?

CHAIRMAN GRAHAM: But once again, if there's just a question you have going towards him, or a point you're trying to get to, let's get to it and --

MR. GUEST: The point I'm making is very simply is

that this measure is cost-effective in a short time, that's all.

CHAIRMAN GRAHAM: Okay.

MR. GUEST: And I think the point is made by the document from the Department of Energy website, that's all.

CHAIRMAN GRAHAM: I will stipulate to that.

BY MR. GUEST:

Q Okay. All right. So let's point then -- let's move on to how FP&L calculated those costs. I'd like to direct your attention to -- okay, so this is FPL's Response to SACE's Production of Document Request Four, entitled AP Inputs. This will be 1 --

CHAIRMAN GRAHAM: This will be 159.

(Exhibit 159 marked for identification.)

MR. GUEST: We're going to be referring to this repeatedly.

CHAIRMAN GRAHAM: Okay.

MR. GUEST: We have an excerpt of this, too, so we don't have to put this giant spreadsheet in. And since this is in insurance policy type, we also have a blow-up that's readable. So we're going to put those in together. This will be 160 -- no, he wants to -- we'll put that in together. Can we put those two together as 159?

CHAIRMAN GRAHAM: No, I think we should have those separate --

MR. GUEST: Okay.

CHAIRMAN GRAHAM: -- because it there's any objections to it, that way we don't have to separate it later.

MR. GUEST: Okay. So we're handing that out to the witness.

CHAIRMAN GRAHAM: Let's just hold off for a second until everybody gets a copy of that, especially me. Especially me. Especially me.

(Exhibit 160 marked for identification.)

MR. GUEST: Are you all's copies highlighted?

CHAIRMAN GRAHAM: Yes.

MR. GUEST: All right. Are we ready?

CHAIRMAN GRAHAM: Now, are there two things that you passed out? I just this one document in my hand.

MR. GUEST: I think the second one is coming. It's the one that's easier to read, I think.

CHAIRMAN GRAHAM: Okay, so which one do you want labeled 159, and which one is going to be 160, the thin or thick one?

MR. GUEST: The thick -- the thick one will be 159 and the skinny one will be 160.

CHAIRMAN GRAHAM: All right. So 159 is Florida

Response to SACE's First Production of Documents, first POD number four. And Bates stamp -- well -- and then 160 is just the excerpt of the exact same thing?

MR. GUEST: Yes.

CHAIRMAN GRAHAM: Got you. Thank you.

BY MR. GUEST:

Q Okay, now, I'd like to direct your attention to, I think, the highlighted one up here that says hot water heater blanket RSF408, and slide over here to the column that's just to the right of the fold.

A I'm sorry, can you first get me to the right page?

Q Okay, okay, this page -- this is the skinny one and it's the -- it's the page that -- yes, that's the one. So do you see the RSF408 hot water heater blanket? Do you see that?

A Yes.

Q Okay. Let's go over to the column that's just to the right of the fold that says participant equipment cost. Do you see that?

A Yes.

Q Okay. You have the price tag of $63.

A That's what it says.

Q Okay. So now let's turn to the next question about how this measure fares using your rates test. I'd like to bring out an exhibit which is Sierra Club's First

Discovery Request, Interrogatory 18, attachment one, tab three. And this will be another table we will use repeatedly.

CHAIRMAN GRAHAM: Okay, so this will be Number 161.

(Exhibit 161 marked for identification.)

MR. GUEST: Everybody have it?

CHAIRMAN GRAHAM: Yes, sir.

BY MR. GUEST:

Q Okay, now, this is 161. Okay, now, I'd like to turn to the last page, page eight of eight. And you see highlighted there the fifth row from the top RSF -- well, look at the top first. It says technical potential for measures that fail the rates test. See that?

A Yes.

Q That's what this list is. And if you look at the fifth one, it says RSF408 fails, correct?

A It's listed among those measures that failed in the first screening step, yes.

Q Okay. So we have something that's cost-effective, doesn't cost very much, but it fails the rates test. Now let's turn to --

A Disagree. It's cost-effective perhaps under the participant test but it's failing the RIM test.

Q Okay. Well, let's turn to how we treated it in the TRC, what ratepayers actually pay test. Now, the first

thing you did before you did that calculation was you added administrative costs, right?

A Repeat the question.

Q The first thing you did before you applied the total resources costs to the TRC test is you added administrative costs?

A Disagree.

Q Well, let's just direct your attention now to -- just to clarify that, let's go to Exhibit 160, and you go two left of where it said participant costs.

A I'm sorry, which is Exhibit 160?

Q I'm sorry, it's the skinny table.

A The one with all the colors?

Q That's right.

CHAIRMAN GRAHAM: Dr. Sim, do you have a pencil or pen so you can identify these?

THE WITNESS: No, sir, I do not.

MR. GUEST: We can give you a red pen. Here's a red -- well, all right.

THE WITNESS: Thank you. So this page is 160.

MR. GUEST: This exhibit is 160.

THE WITNESS: Okay.

CHAIRMAN GRAHAM: So if you'll repeat your question.

BY MR. GUEST:

Q Yeah, the question is, do you see the column that's labeled administrative one-time cost? Do you see that column? It's a little to the right of the fold.

A Yes, I see it.

Q You go down there and you look at the RSF408, it shows you have an administrative cost of $108.

A That's what the column says. And I might point out that the page -- Exhibit 160 is looking at inputs into the process. These inputs were prepared under Mr. Koch's supervision. If there are questions regarding admin costs or cost of measure, he would have been the more appropriate witness to address these. I use these as inputs.

Q So let's move now to FPL's Response to Sierra Club's first discovery request, Interrogatory 18, attachment two, tab four. And this will be another table we'll repeatedly use.

CHAIRMAN GRAHAM: This one will be 162.

MR. GUEST: 162. Thank you.

(Exhibit 162 marked for identification.)

BY MR. GUEST:

Q Are you with me?

A I'm never quite sure, but I'm trying.

Q Good. Okay, so here we are, I'd like to turn to page one of one. This is the technical potential for measures that fail the TRC test. And I'd like you to turn

now to the bottom of that, and you see the one that we're looking at, which is RSF408, fails the TRC test.

A Again, the second step of the screening process, yes, it appears that it failed.

Q Now, if it hadn't failed both the RIM test and the TRC test, it would have failed the two-year payback test, too, wouldn't it?

A Yes, I believe so, if a measure, as you claim, it costs $21 and pays for itself in less than a year, then that certainly would have failed a two-year payback test. It would have also failed a one-year payback test.

Q Okay, let's go to another measure that low income ratepayers can use. And can you tell us what a faucet aerator is? It's a little thing that you screw on your faucet, right?

A I'll accept that description.

Q Okay. All right. And let's turn to your price tag -- we can put it right here -- one moment, I seem to have gotten confused here. Oh, I'm sorry, I forgot, I forgot. I missed a line of questions here. I apologize.

All right, so the total number of households in FPL territory is 2-million-274 -- well, let me give you the exhibit. This will be FPL's Response to SACE's First Request for Production of Documents, number four, titled AP Inputs.

This will be Exhibit Number 163. This, again, is

in insurance policy type, so we have a blow-up that goes with it, which I guess will be 164.

CHAIRMAN GRAHAM: Are there two separate exhibits coming our way?

MR. GUEST: Yes, I suppose. I mean, one is a blow-up of the other. They are separate.

CHAIRMAN GRAHAM: All right, so 163 will be the fat one.

MR. GUEST: Yes.

CHAIRMAN GRAHAM: That's FPL's Response to SACE's First Production of Documents, first POD number four, Bates stamped 0092300925, and 164 will be the excerpts.

(Exhibits 163 and 164 marked for identification.)

MR. GUEST: So the total --

MR. BUTLER: Excuse me, Mr. Chairman, we need to raise again the objection, this is an interrogatory that is attested to by Mr. Koch, and this whole line of questioning, as Dr. Sim has indicated earlier, is about inputs he receives from Mr. Koch for the analyses he performs.

Mr. Guest should have asked these questions of Mr. Koch. And he's now trying to run through just a whole series of cost inputs that were provided to him by Mr. Koch, and I don't think it's appropriate. I don't think that it relates to either Dr. Sim's testimony or

the parts of the analysis that Dr. Sim performed.

CHAIRMAN GRAHAM: Well, I --

MR. GUEST: Go ahead.

CHAIRMAN GRAHAM: I was going to say, I think Dr. Sim made it clear that this stuff is just inputs that he takes in. He's got no knowledge or research on how it came about. And I guess just as long as the questions that are asked are just taking those givens and moving forward, we can go forward with that. If it goes more back toward where did this number come from, then we can go with the objection. Fair enough?

MR. BUTLER: All right.

BY MR. GUEST:

Q So the only point I'm making here is simply if you look at the skinny one, 164, and more or less just to the right of the -- just right at the very left it says -- they're highlighted -- it says residential single family. And then it shows just to the right of the fold the number comes out to 2,274,979, is that right?

A Are you referring to the yellow highlighted total subsector units as the heading?

Q Yes.

A I see the number.

Q So you agree that's what it says?

A I agree it says total subsector units, and has a

number under it.

Q Now, FPL conducted a study by Itron, contracted for a study to find out how or what fraction of folks that were out there it was feasible for, didn't they?

A I have no knowledge of any Itron study. Again, that would have been more appropriately asked of Mr. Koch.

MR. GUEST: This is Exhibit 94 that's in evidence, so we'd like to provide folks a copy with the pages we're referring to.

CHAIRMAN GRAHAM: Are you handing out another exhibit?

MR. GUEST: I think we have copies of it for folks. This is one that's in the record. We were a little -- it's an excerpt of what's 94 in the record. We've got copies of the excerpt. This was a staff exhibit that's already moved in.

CHAIRMAN GRAHAM: Okay.

MS. CANO: Chairman Graham, I'm sorry, just because there's an exhibit that's admitted into the record doesn't make him now the correct witness to ask these questions of. He's stated anything related to the Itron study would have been better addressed to Mr. Koch, and that stands, regardless of whether he now has a copy in front of him.

CHAIRMAN GRAHAM: I guess let's see what the

question is, and then we'll hear your objection. I understand where you're coming from, but Mr. Koch is no longer on the stand, and we're not going to try to unring the bell.

BY MR. GUEST:

Q So turning now to the first page I have for you is the applicable fraction, and that's on B.1-13, which I guess you can get to by starting at the beginning. I guess it's 13 pages in, and there's highlighting, of course, on the page.

CHAIRMAN GRAHAM: You have to say that one more time. What page are we looking at?

MR. GUEST: Page B.1-13. And the -- I think that's a Bates stamp on the side. It's FPL 151292.

THE WITNESS: I am on that page.

CHAIRMAN GRAHAM: Yes, sir.

BY MR. GUEST:

Q So this is applicable to 85 percent of homes that would be single family, 90 percent of multi-family, and 98 percent of mobile homes, correct?

A I do not know what applicability factor means. I had no part in this 2009 study and have never seen it before.

Q Okay. Let's turn then to B.1-18. Let me just jump ahead, then, to B.1-23, which is just a few pages from the end.

A I'm on that page.

Q Okay, and if you look down to the measure number 408, it shows that the water heater blanket is feasible for 60 percent of each of single family, multi-family, and mobile homes.

A I see the label of feasibility factor. Again, I do not know what it means, I do not know what constraints, if any, were put on this.

Q Okay. Now, you know that -- excuse me a moment. Okay, let's move on to the faucet aerator which is -- now we can use the same documents -- which is number 407, RSF407.

MS. CANO: I'm sorry, what have you just turned to?

MR. GUEST: We're on -- we're on Exhibit Number 156. We're identifying here the number, because we've got to use numbers in the rest of the tables. So that's page 21 of 22.

THE WITNESS: I'm sorry, I'm lost. I don't know what, of the many documents you've given me, you wish me to turn to now.

BY MR. GUEST:

Q This is the table of measures, it's just giving you your code numbers, and it's 21 of 22. It's the first one I talked to you about.

A I don't remember which is the first of the many you've asked me to look at.

CHAIRMAN GRAHAM: This is probably one that you

didn't label. It's Florida Power and Light's Response to Sierra Club's First Interrogatories, Interrogatory Number 18, attachment three, tab three. And we have it labeled Exhibit 156.

THE WITNESS: I'm sorry, Mr. Chairman, FPL Response to Sierra Club's First Interrogatories, number 18?

CHAIRMAN GRAHAM: That's correct.

THE WITNESS: Attachment one, tab three?

CHAIRMAN GRAHAM: Attachment three, tab three.

THE WITNESS: Wrong document.

CHAIRMAN GRAHAM: It looks like it's about 20 pages thick.

MR. MOYLE: Does the last page of it, at the bottom right, say eight of eight?

CHAIRMAN GRAHAM: No, the last page says page 22 of 22.

THE WITNESS: I believe I have the document.

CHAIRMAN GRAHAM: Okay.

BY MR. GUEST:

Q So that number, then, is called --

A I'm sorry, sir, what page of this document?

Q It's 21 of 22.

A All right, I'm on that page.

Q Let's just leave that open so we can keep referring to that. So that's what -- that's what number

RS407 is, is the faucet aerator. So let's go and look now at what you did with it, by turning to Exhibit 160, which is the skinny one, referred to as the skinny one. And you see over there in the highlighting it says faucet aerators?

A I'm pleased to say I'm with you.

Q Okay. And now let's look at what the equipment cost is, and you count it as $10. Is that right?

A That's what it says.

Q Okay, so these pay back in a pretty short time, don't they?

A Yes, I would say of the two measures you've referred to, faucet aerators and water heater blanket, if we accept the cost numbers that you've provided or that we've discussed, these would virtually be poster children for free ridership. They're edging very close to it with what appears to be very quick paybacks and very low cost measures.

Q Okay, say payback well under two years?

A Certainly for the first one, according to the document you gave me, which says it pays for itself in about a year.

Q Okay, so you agree it's the same with the -- with the faucet aerators?

A I don't have a document in front of me that makes the same statement as the document you provided for the water heater blanket.

Q But you don't disagree that it -- you said it was a poster child, so it means it pays off in less than two years, doesn't it?

A I would think anything that's a $10 cost would pay for itself fairly quickly.

Q But it failed the RIM test, didn't it?

A It may have.

Q Well, let's take a look. This is -- what number is this? I lost it. We're looking for number 407 on Exhibit 161, the last page. We're going to keep referring to this, too.

A I'm afraid I don't know which one is 161. That's one I did not label, either.

CHAIRMAN GRAHAM: That is the one that you had earlier that's number 18, attachment one, tab three.

THE WITNESS: Thank you. And this is 161?

CHAIRMAN GRAHAM: 161, correct.

THE WITNESS: Okay, which page, please?

BY MR. GUEST:

Q It's the page eight of eight. You can just leave it open to that page.

CHAIRMAN GRAHAM: Last page.

BY MR. GUEST:

Q Last page, yes. So please mark it 161. We'll keep going back to this thing. Are you with me?

A Yes.

Q Okay, if you look at the fourth row from the top it shows that RSF407 failed the RIM test.

A It failed in the first step of the screening under RIM, that's correct.

Q Okay. Okay. So now let's look at what you had for administrative costs for your $10 faucet aerator. Look down at Exhibit 160, the skinny page. Are you with me?

A I am on that page.

Q So if you look at the column that says administrative costs, and you line that up, that's right next to the fold, and you go down to -- it was 407, that shows your administrative cost was $108, isn't that right?

A That's what it says. And although these are not my numbers, I see no reason for there to be a correlation between the cost of administering a program and the cost of the measure, itself.

Q Okay. So now let's see how our $10 faucet aerator fared under your TRC test, and turn to Exhibit 162.

A I'm there.

Q You see, I think, if you look at that from about the sixth or seventh line from the bottom it says 56 on the left, it shows that the $10 aerator failed.

A That's what it says.

Q It would also have failed your two-year screen,

too, wouldn't it?

A I don't know for certain, but I would suspect that it would, given the low cost and any kilowatt hours savings. It probably would have failed a one-year payback test.

Q So here we have another cheap, cost-effective measure for low-income communities that got screened out by all three of your measures, all three.

A What we have is a -- I'll disagree with that characterization. What we have is a measure that is cost-effective for a participant, but not cost-effective for the general body of ratepayers. These measures appear from the input to have very low kW reduction. I'll turn to faucet aerators. Summer kW reduction is 0.01, winter reduction, 0.02. It's providing virtually nothing in regard to demand savings and therefore the benefits under both RIM and TRC screening paths will be very low.

Q So let's turn now to the low-flow showerheads, which are shown in our coding sheet here, which is exhibit number -- well, let's just jump over to that. We can go to the skinny sheet, which is 160. And there's the top one that's highlighted, it's a low-flow showerhead.

CHAIRMAN GRAHAM: Question for you, before we move forward. To kind of cut through a lot of this stuff that it looks like you're going to, I take it you're going to prove what you just did on the last two for all

five of these things highlighted on the skinny sheet?

MR. GUEST: I am, actually. Yes.

CHAIRMAN GRAHAM: Okay. Now, what happens after that?

MR. GUEST: What we're simply showing is that with these -- with all of these -- if he could go along with this, with these sheets, what we're simply showing is that you've got the highly cost-effective measures that cost very little that are appropriate for low-income communities, and they fail all the tests, always. And that they always have $108 in costs. And that's relevant because what I'm going to show you that happens afterwards, when you get to the items that folks can write big checks, what happens with those.

CHAIRMAN GRAHAM: Let's skip on to that.

MR. GUEST: May I simply say that, just for the record, that the same of these things -- we're on 160 -- that the same is all true for the measures, we were going to do 405, low-flow showerhead, and the heat trap, RSF411, seeing all the same pattern with all these.

CHAIRMAN GRAHAM: Yes.

BY MR. GUEST:

Q Okay, $108 administrative costs, quick payback, fails all the tests. So now let's turn next to the measures that folks can write big checks. Let's see what happens with

them.

Let's look at item number 803, which is identified on exhibit -- here we are -- it's the skinny one, the skinny one. So here we have a variable speed pool pump. That's a swimming pool pump. This is something that low-income communities don't get.

And let's look over here at the column that has equipment costs. You see that? This is for RS803 -- RSF803, participant cost. That's the column a little to the right of the fold. Are you with me?

A I see it.

Q The price tag for that one is $842, and your administrative costs for your pool pump is the same as it is for a $4 faucet aerator, isn't that right?

A It is. And again, I'll state I don't see any direct correlation between the cost of a measure and what the cost to administer a program is.

Q So let's turn next to see what -- how this fared using the RIM test. This is exhibit 161.

CHAIRMAN GRAHAM: Which page?

MR. GUEST: It's page eight of eight. It's the last page.

BY MR. GUEST:

Q Are you with me?

A I believe so.

Q Okay. Now, that failed the RIM test, correct?

A Yes, it failed in the first step of the RIM screening.

Q Okay. So you were talking about small savings last time. Can you tell us, looking across these columns, what the savings were?

A Which exhibit are you now referring to?

Q 161.

A 161? One moment, please. 161 does not refer to savings as I think of them as input.

Q Okay, I'll just move on. So now I'd like to bring out FPL's Response to Sierra Club's First Interrogatories, number 18, attachment three, revised, tab two. This is --

THE WITNESS: Exhibit number, please?

MR. GUEST: That will be 166.

CHAIRMAN GRAHAM: This is a new one coming out?

MR. GUEST: Yes, it is. So this is a bunch of pages, and we're going to use the last page. I don't think we have a blow-up for this one.

MS. HELTON: Mr. Chairman, I didn't get a 165. Did we -- did I miss that?

CHAIRMAN GRAHAM: It was the -- this big technical report.

MS. HELTON: Oh, oh, okay. I just forgot to write that down. Sorry. Oh, actually, I'm not sure we needed

to mark that, because I think it was already marked PSC Exhibit Number 94, unless --

MR. GUEST: That's right. That's right.

CHAIRMAN GRAHAM: That's all right, we'll just count it twice.

MS. HELTON: Okay.

MR. GUEST: So it will be 165?

CHAIRMAN GRAHAM: No, this one that you just passed out is 166. That other one, this is 165, correct.

(Exhibits 165 and 166 marked for identification.)

BY MR. GUEST:

Q So this is a page -- I'm on the very last page -- and this is the ones that passed the TRC test. Are you with me? Let's turn to -- we were talking about number 801, and that's about the seventh from the bottom, right above 803. Are you with me?

A I'm on the last page, yes.

Q Okay. All right, let's go all the way over to the far right, and you see it, 80 -- 801, go all the way to the far right, into the last group that talks about annual gigawatt hours. And I'd like you to look in the column for 2016. And you see that our swimming pool pump, if you follow the line out, that's got nine annual gigawatt hours of savings, isn't that right?

A That's what it says.

Q And that's a residential measure. And if you go down to the first line of the numbers, at the bottom it shows that the total for the year 2016 for residential measures is 17.2. So well over half of the TRC measures that pass are for swimming pool pumps for residences, isn't that right?

A What was the question, sir?

Q More than half of your TRC savings are from a swimming pool pump that costs $842, isn't that right?

A That's what the data shows.

Q Let's go to the one above it, RS801, and let's look that up on 156. That's this -- that's our table of measures. That's our code translator. Are you with me?

A Which page?

Q Well, the page over here is our coding page that shows that measure number RSF801 is a two-speed swimming pool pump.

A Which page?

Q I'm sorry, it's the last page, 22 of 22.

A I'm there.

Q Okay. And so you see that that one also passed your TRC test, and it has one annual gigawatt hour of savings, if you turn to the far right column on the last page of Exhibit 166.

A That's what it says.

Q So if you add that to the other swimming pool pump

you end up with ten of the 17.2 residential gigawatt hour savings are from swimming pool pumps, and that's 58 percent. That's not a measure that's targeting low-income communities, is it?

A I don't believe it is.

Q Okay. Now, let's turn to the measures that passed the rates test. And I'd like to direct your attention to measure number 103.

A What exhibit, please?

Q Let's see --

CHAIRMAN GRAHAM: Exhibit 156; 103 is the 17 SEER split air conditioner.

MR. GUEST: Yes, the skinny -- the skinny one. Thank you. I'm sorry. Yeah, that's the air conditioner.

THE WITNESS: Excuse me, 156?

BY MR. GUEST:

Q I'm sorry, it's Exhibit 160, and it's the fourth one from the top. That's our -- let's see, it's our RSF103 is our 17 SEER split system air conditioner.

A Okay, I'm there.

Q And let's go over to the same thing we've been doing; let's go over here and you see the participant cost is $725. Do you see that?

A 725.

Q But it doesn't cost as much to administer as an aerator, does it? It costs $25, two rows -- two columns to the left. The air conditioner only has administrative costs of $25, isn't that right?

A That's what the data shows.

Q And this air conditioner passes the rates test, doesn't it?

A I'm sorry, passes the what test?

Q The RIM test.

A If you'll refer me to which exhibit number --

Q Okay, let's take FPL's Answer to Sierra Club's First Interrogatory, 18.

CHAIRMAN GRAHAM: Which exhibit is that?

MR. GUEST: I don't think it's in yet. It will be 168, I'm told, from good authority.

MR. MOYLE: Just so the record is clear, when you are saying the rates test, that is the RIM test, right?

MR. GUEST: Rate Impact, it's the first word in Rate Impact. That's what I mean by the rates test.

CHAIRMAN GRAHAM: Now, unless I've missed something, we're on 167, correct? Okay.

(Exhibit 167 marked for identification.)

BY MR. GUEST:

Q Okay, let's turn to -- it looks like page two of four.

A I'm there.

Q Okay. So -- wait a minute, can I have a second? Okay, so we'll wait until everybody catches up here. So that page, page two of four, the little writing at the bottom says RIM achievable potential. And go to the right set of columns under RSF103, which is pretty small type, and I read the number for 2016 as 8,042, is that right? About 8,000.

And then you go down to the bottom there, and it reads residential is 25.6. So what that means is that eight out of 25 of your residential RIM test passing measures were one air conditioner.

CHAIRMAN GRAHAM: Is there a question?

BY MR. GUEST:

Q Yeah. I mean, that's right, isn't it? That's what it means? One-third are an air conditioner, one air conditioner?

A That appears to be correct.

Q Now let's look at the -- continuing on this, let's turn to the TRC test, remembering that we started out with this passes -- this gets you a third of all what you're getting under the RIM test. This one measures gets a third of the residential savings. Now let's turn to the TRC test.

CHAIRMAN GRAHAM: Which exhibit?

MR. GUEST: 168.

CHAIRMAN GRAHAM: So it's a new exhibit?

MR. GUEST: It is. FPL's Answer to Sierra Club's First Interrogatory, 18, attachment two, tab 3.

(Exhibit 168 marked for identification.)

MR. GUEST: May I pause for a moment? I'm getting overwhelmed by my numbers calculations here.

All right, I'm sorry. I apologize, I was confused.

CHAIRMAN GRAHAM: Sure.

BY MR. GUEST:

Q All right, now let's go to the last page of the RIM achievable potential sheets I've been talking about before, which is 167.

THE WITNESS: I'm sorry, we're not looking at the pages that were just passed out?

MR. GUEST: Not yet. Not yet.

THE WITNESS: And what you just passed out was 150 --

CHAIRMAN GRAHAM: 168.

THE WITNESS: Sixty-eight.

MR. GUEST: I'm going back to 167, because I made a mistake here.

CHAIRMAN GRAHAM: Okay, Exhibit 167. Which page are we looking at?

MR. GUEST: I'm looking at page four of four, the last page.

BY MR. GUEST:

Q And where I'm referring to you is where it says RSF103, column for 2016, annual gigawatt hour savings, and it turns out this one is 16, the annual gigawatt hour savings. Do you see that?

A I do.

Q You do? Okay, now let's go to the bottom where it's all added up. Under residential it shows that the total for 2016 is 22.2. Do you see that?

A Yes.

Q So that 72 percent of the residential annual savings are actually from this one air conditioner. Do you see that? Do you agree?

A I don't see 72 percent, but it looks close to that, so I'll accept, subject to check.

Q Okay. Now let's look below that at the total, which is -- total for the year is 45.6 for the year. Do you see that?

A I do.

Q So this air conditioner is actually 35 percent of the annual savings on your RIM test, isn't that right?

A The math appears to be about 35 percent, yes.

Q Now, let's turn to the use of this air conditioner in the TRC test.

CHAIRMAN GRAHAM: Which exhibit is that?

MR. GUEST: That will be Exhibit 168.

CHAIRMAN GRAHAM: Which page?

MR. GUEST: This is page four of five. And this is measures that failed the TRC test.

BY MR. GUEST:

Q So you see right there is RS103 -- is that my number? Yes. That failed the TRC test, correct?

A Yes, RSF103 is on this page.

Q So I'd like you to look over the measures that pass the rates test, which is exhibit -- I'm sorry, this is killing me.

CHAIRMAN GRAHAM: You, too?

BY MR. GUEST:

Q And I'd like you to just look over the list of measures there.

A I'm sorry, the Exhibit is 156?

Q 156.

MS. CANO: And you're asking him to scan the 22 pages?

BY MR. GUEST:

Q No, I'll get you a better page. Let me just cut over this. Let me see if I can do it without an exhibit this time. Let me just go over that, shorten this, by asking you, it's true, isn't it, that when you look at all the measures in 156 that are passing the RIM test, they all relate to heating and cooling, don't they?

A One moment, please. A quick scan through here doesn't tell me what these measures passed or failed. I see a list of measures and I see various inputs.

Q Well, let me just ask you, without going through that, it's true, isn't it, that the things that passed the RIM test are the things that are -- that are related to heating and cooling?

A I wouldn't know. I deal with code numbers. I don't deal with descriptions of measures.

Q Okay. Well, let's look at page 20 to 21. Let me look at page 20 to 21.

CHAIRMAN GRAHAM: Of the same exhibit, 156?

MR. GUEST: Yes, and let's just -- in fact, let's just start at page 21 or 22, and maybe it will shorten this up here.

THE WITNESS: Which page are we on?

BY MR. GUEST:

Q I'm on the last page, page 21 of 22.

A 21 of 22?

Q Right, 156. Let me press on with something else and come back. Let me go back to my -- to my earlier description of a hypothetical where the President of Florida Power and Light is on a radio show, it's a call-in show. And somebody calls in and says what should I do to reduce my electric bill? And the President of Florida Power and Light

says, turn your air conditioner up to a higher temperature at night in the summer. That would fail the RIM test, wouldn't it?

A Can you show me an analysis of that example which I could look at to see?

Q Certainly. I'm just ask you this. Let's just assume that summer nights are when the lowest cost energy is produced. That's the lowest cost time. Can you assume that?

A No.

Q When is the lowest cost time, then?

A Probably in the shoulder months, in the -- in the early morning hours.

Q Okay. Well, let's just assume that then the President of Florida Power and Light says turn your thermostats up at that time, the lowest shoulder months, in the morning. Let's assume that. That would fail the rates test, wouldn't it?

A I think it would fail both the RIM test and the TRC test because you would be getting absolutely no kW reduction, say, at 2:00 in the morning.

Q So if he said turn your thermostats off, just turn your heating and cooling off completely at that time, you're saying there wouldn't be any kilowatt savings?

A There would be kilowatt hour savings, but I don't accept the hypothetical that our -- the President of our

company would make that suggestion.

Q Well, let's just assume that he did, because what we're doing is we're exploring the rates test. That suggestion would fail, wouldn't it?

A I believe I already answered that. I think that would fail both the RIM and the TRC test.

Q So what happens -- let's just go through to the TRC test. There is no cost to the consumer at all to turn off the heating and cooling system, is there?

CHAIRMAN GRAHAM: Sir, make sure you speak into the microphone so we get you on the record.

BY MR. GUEST:

Q I'm sorry. There's no cost at all to turning off the heating and cooling system, is there?

A No economic cost.

Q No cost. So what happens, then, is that the folks who turn their systems off have lower bills, right?

A You're referring to the participant?

Q Yes.

A They would have a lower bill.

Q So the total resource costs go down and that passes, right?

A Not necessarily.

Q Well, if the costs go down, how does it not pass?

A Where are the benefits to the rest of the

customers?

Q Well, that's why it fails the rate test is there aren't any. It's only to the folks that are participants.

A Repeat, please?

CHAIRMAN GRAHAM: Microphone.

BY MR. GUEST:

Q Well, that's my whole point is that -- is that the participants --

CHAIRMAN GRAHAM: Microphone. Thank you.

BY MR. GUEST:

Q My whole point is that the participants have lower monthly bills because they've turned their ACs off, turned their AC and heat pumps off. The folks that didn't have a higher share of the fixed costs, so there's upward pressure on rates; that's why it fails the RIM test, right?

A I believe so.

Q But then the folks that did that have lower bills, don't they?

A The participants would have lower bills, the rest of the customers will have, with perfect ratemaking, will have higher rates and higher bills.

Q Right. But the total of what all the customers pay has gone down, isn't that right?

A The total cost may have gone down but electric rates will have gone up, so the participants may be better

off, the non-participants of whom, in this rather bizarre example, do not turn off their air conditioner in the middle of the night would have higher rates and be worse off.

Q Okay. So a very simple measure that just cuts your utility bill in that example doesn't work under your RIM test, does it?

A It might not pass that. It might also -- I don't think it would pass a free rider screen.

Q Okay, so that would fail -- it would also fail your two-year test, too, wouldn't it?

A It would fail a one-year test. It would probably fail a one-week test.

Q Okay. So now let's turn to the opposite example. So let me turn to the opposite example. So what happens is he's on the radio show and he says, well, turn your air conditioning thermostat up during the hottest time of the day in the summertime. That would definitely pass the rates test, wouldn't it?

A Don't know.

Q Well, let's assume he said turn your air conditioners off at the hotest time in the summer. Let's assume he did that. That would pass the rates test, wouldn't it?

A First of all, I can't accept that premise.

Q Okay, well, let's not use the premise. Let's use

measure number 950 and see how that works, measure 950 on --

CHAIRMAN GRAHAM: What exhibit, what page?

MR. GUEST: 156. That's residential, on-call, page 22.

BY MR. GUEST:

Q Okay, so what this is, it's called the on-call program. And what happens is that, as I think someone described earlier, you've got a little switch inside your air conditioning, your central AC heat pump, and what happens is that you get a little credit every month and when peak demand gets really high, the utility can turn it off remotely; isn't that how it works?

A Generally, no.

Q Okay, can you explain how it works, please?

A It generally cycles an air conditioner so that, for example, the two people sitting to your left, we stagger the cycling so that all three of your air conditioners will not be operating at the same moments in time, therefore lowering the demand from the three of you in total.

Q So how that's different from my example is that -- is that the utility does it through a signal, and you take turns with your neighbor, but it's really the same, isn't it?

A It's not turning your air conditioner off, it's changing the cycle.

Q Turning it off and on; isn't that what you mean?

I'm just talking about the off part.

A Okay.

Q So that measure passes the RIM test, doesn't it?

A I believe it passes all three tests.

Q Yes, it does. Now, let's look at -- let me go back here. So what happens here is that -- is that in my example where it failed the RIM test, where all people did was turn their air conditioner off in the low times, but it would pass the RIM test at the high times, that really is dealing with overall -- overall reducing of electric use is the first example. And the second example is weather-sensitive peak demand, isn't that right?

A As I understand your example, there are energy savings in both, but when it occurs during the peak hour of the day, there are also kW savings, as well. So you would expect more benefits, and that's what you see with the tests.

Q Now, if you had a statute that had a separate obligation to reduce overall energy consumption and also to reduce the peak hours, the peak usage, that would signal you should be using both the RIM and the rates test, wouldn't it?

A Can you repeat the question, please?

Q That if you had a statute, as ours, that has goals --

CHAIRMAN GRAHAM: Sir, you need to speak into the mic so he can hear the question.

BY MR. GUEST:

Q Okay. You see -- you have the statute before you? Do you have a copy for him? Do you have a copy of the statute?

A Thank you.

Q So if you had step load obligations in the statute to talk about rates of weather-sensitive peak demand and rates of electric consumption, then what you'd want to do to comply with the statute would be to use any measure that complied with the rates test or the TRC test, isn't that right?

A Well, first of all, I'm not accepting that this is the full statute in its entirety. So you're asking me to look at a -- what may be a truncated version of this.

Q Okay. So let me go back to a line of questioning that I fumbled earlier. So let's start with 167. And this is going to that heating and cooling question that I talked about earlier. In fact, maybe we can write all these down to save us some time.

MS. TAN: Someone left this phone in the bathroom, the ladies room. If it's yours, please claim it. If not, I'm going to turn it off.

THE WITNESS: Which exhibit, which page?

BY MR. GUEST:

Q 167, two of four.

A Okay.

Q Okay, so I'm looking now -- let's just do all these at the same time. We're going to look at all the ones that are here on the summer kilowatt hours for the things that pass the RIM test -- I'm on page two of four. And RSF means residential, so we'll just use those. And you see the numbers are 103, 115, 116, 124, 141, 142, 150, 202 and the 950 we talked about a little while ago.

And now let's go and look how those numbers -- what they match up to. Now, can you look those over and confirm, from Exhibit 156, page 20 of 22, that all of those are heating and cooling measures?

A Repeat the numbers you'd like me to check, please.

Q Okay, well, let's just do it this way. RSF103 are air conditioner. RSF115, electronically commutated motors on an air handler. RSF116 is duct repair. RSF124 is ceiling insulation. RSF141 is electronically commutated motors on an air handler -- is that going too fast? RSF142 is duct repair. And turning the page, RSF150 is ceiling insulation, as is RSF202. And, of course, the 950, the air condition cycling during the peaks. Every one of those deals with heating and cooling, doesn't it?

A They appear to.

Q So what that means, then, is that the things that pass the rates test are the things that reduce energy

consumption during the peak, isn't that right?

A They generally reduce energy as well as reducing peak demand.

Q Okay. And the things that pass the TRC test are the ones that tend to reduce demand in the off-peak times, isn't that right?

A Disagree. I think that they also generally reduce demand at peak hours.

Q Yeah, but the ones that -- the ones that fail RIM and pass TRC are the ones that really aren't addressing peak demand, isn't that right?

A Repeat the question, please.

Q The ones that are passing TRC but failing RIM are the ones that are not addressing peak demand?

A The ones that are failing --

Q RIM, passing TRC.

A == are --

Q The ones that are not addressing peak demand.

A Failing RIM but passing TRC -- no, I think virtually all measures address to some degree peak demand.

Q Well, then, let's look at the measure 803 that we talked about earlier, which was our variable speed pool pumps that account for a huge fraction, 30-something percent of your TRC measures. That's not addressing peak demand; those things run all the time, don't they?

A No. If you look on Exhibit 156, page 22 of 22, it shows that for variable speed pool pump, RSF803, it reduces 0.65 summer kW reduction and winter reduction is 0.37. For a residential measure, that's a pretty heavy kW reduction.

Q But you -- but you cut it out with your rates test, didn't it?

A I would have to be -- I would have to go back to the exhibits to see. It's possible.

Q Let's just assume that we remember what the testimony was on that, and I'll press on. Now I want to turn to the -- are you ready for a break, or do you want me to keep on droning?

CHAIRMAN GRAHAM: Let's finish with this witness.

BY MR. GUEST:

Q Okay. Now, FPL is building -- is treating an unbuilt anticipated power plant for the year 2019 as if it's locked down, isn't that right?

A Incorrect.

Q Oh, no, I'm sorry. I'm tired, and I'm losing my notes. I need to go on to low income programs here. We talked about it earlier. The Chairman asked about the low income programs. So let's turn to those.

There are 729,439 eligible low-income customers in your service territory, is that right? Does that sound right?

A Can you point me to one of the exhibits for that, please?

Q Public Service Commission Exhibit 135 annual report.

CHAIRMAN GRAHAM: Do you have a copy of that?

MR. GUEST: We'll bring a copy around.

CHAIRMAN GRAHAM: Okay.

MR. GUEST: Okay, I'm on page seven.

CHAIRMAN GRAHAM: Now, you said this already had an exhibit number. What was it?

MR. GUEST: 135. I'm on page seven.

CHAIRMAN GRAHAM: Okay.

BY MR. GUEST:

Q And I'm looking down to 2013, the column on A on page seven. It shows that your total number of eligible customers is 729,000-and-change. You see that?

A I do.

Q And that the cumulative penetration level over there in the next column over is .3 percent. And then you get over actual -- two columns over to the right, under cumulative penetration percent, it's .8 percent. So you're reaching less than one percent of the low-income households with that program, isn't that right?

A That appears to be what it shows.

Q All right. So let's turn quickly to your future

plans. So FP&L is treating as built an unbuilt anticipated power plant that would be built in 2019; you're counting that as built in your calculations, isn't that right?

A In which calculations?

Q In the calculations of these benefits and costs, the avoided unit.

A Exactly the opposite. We are assuming that each of the 850 measures avoids a pro rata share of that unit.

Q You're talking about that unit or are you talking about the one you're projecting for 2025?

A I'm talking about 2019 combined cycle. All of the 850 DSM measures --

Q Excuse me, let me turn you to your testimony --

A I haven't finished my statement.

Q I'm sorry. I apologize.

A All of the 850 measures were screened against the 2019 combined cycle.

Q Let me turn to your testimony, and maybe you can clarify it for us. I think I'm turning to page 46, at the bottom. Do we need to -- do folks needs to have this?

CHAIRMAN GRAHAM: Is this 46 of his direct testimony?

MR. GUEST: Yes, it is.

BY MR. GUEST:

Q Let me get set up here; have it in front of you.

Can you read that over on page 46, beginning with page -- line seven?

A Yes, I'm familiar with it.

Q So what it reads is that you're going to need a 2019 plant in order to meet their resource -- your resource needs, is that right?

A That was the conclusion we reached later on after the individual screening of each individual measure.

Q So the fact that you ended up excluding 99.9 percent of the available measures had nothing to do with that calculation, is that it?

A And can you point me to the 99.9 percent?

Q Yes. Let's go to -- let's start with -- I don't know what exhibit -- Exhibit 94. We'll call this -- can we call this a new exhibit number?

CHAIRMAN GRAHAM: Do we have copies of Exhibit 94?

MR. GUEST: Yes, we do. This is an excerpt that makes it easier to play with.

CHAIRMAN GRAHAM: Let's just make sure the witness has it in front of him.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: And this is already Exhibit 94, correct?

MR. GUEST: It is. Well, this is an excerpt of 94.

CHAIRMAN GRAHAM: Okay. So we'll call this Exhibit

169.

(Exhibit 169 marked for identification.)

BY MR. GUEST:

Q So you started with a technical potential of 69,694, is that right?

A I'm sorry, which page of this exhibit?

Q I'm sorry, on page -- tab one of one, which is the last page.

A All right, I'm there.

Q On the far right -- is it highlighted in your copy? Yes? So you've got -- no? Is it highlighted? No? Okay. So -- so looking at 2014 technical potential, that row, in the far right column, annual gigawatt hours, and the total is 31,468, to which you add 38,136. And that gets you to 69,604 as your total technical potential. And you then reduce it at your initial RIM and TRC screen from 69 to about 17,174.

A I'm sorry, sir, I'm not following this on this page.

Q Let me jump over that, let me just jump over all that and go right down to the final outcome, which is goals that are 59 gigawatt hours. That is less than one percent, isn't it? In fact, it's less than .1 percent, isn't it?

A The math is probably in that area. However, what we're referring to are -- we're starting with technical

potential, which is not a real world number. It assumes that there are absolutely no constraints, no concerns over cost-effectiveness.

If magically you could wave a wand and everything that it was possible to install was installed, and you're comparing it to a number that has been screened down to what is cost-effective, what incentives can be paid, and what is usable or most economic on a particular utility system, you're comparing two completely unalike numbers.

Q And you're applying a RIM test to get there and you're also applying your two-year screen, too, to get there, aren't you?

A Those are two of the considerations. If we had gone the TRC route with the two-year screen, we would have been at a not much different number.

Q So you end up screening out 99.9 percent of the measures, right?

A No.

Q From beginning to end, that's the loss, isn't it?

A No. You're referring to measures. Your table here is referring to gigawatt hours, which are hypothetical in start, and at the end you're talking about gigawatt hours that are actually achievable in the real world and usable by the utility system as economic.

Q Okay, let me turn now, then, to the reserve margin

issue. What you want to do here is propose a whole new idea to the Commission which is that you're going to have a ten percent reserve that's generation only, isn't that right?

A Repeat the question, please.

Q You're proposing -- in coming up with these numbers, you used an assumtion that you had to have a 10 percent reserve margin that was generation, generated power, right?

MS. CANO: I object to the characterization of the question.

CHAIRMAN GRAHAM: Can you restate the question?

BY MR. GUEST:

Q Okay. Can you explain what -- the generator only reserve margin that you used?

A I didn't catch the last part of --

Q The generation only reserve margin that you're using here.

A You're asking me to explain it?

Q Yeah.

A It is a third reliability criterion that FPL believes is needed, so we've introduced it this year. It looks at the load forecast, it looks solely at generation resources, and it says that in order to maintain and enhance reliability we believe that we need a generator only reserve margin minimum of 10 percent.

Q Why do you do that?
A Because we believe it's needed.
Q Well, let's turn first to your -- you know what LOLP is?
A Yes.
Q It's your -- can you tell us what it is? Can you describe what it means?
A It's a loss of load probability, which is one of the other two reliability criterion that FPL uses.
Q It really is the blackout risk, isn't it?
A I've never heard it referred to in those terms.
Q Yeah, but that's what it is, isn't it?
A I've never heard of it referred to in those terms.
Q But I take it, then, it is? You agree?
CHAIRMAN GRAHAM: It was asked and answered. Move on, please.
BY MR. GUEST:
Q Okay. All right. So that's really the risk, that you'll end up not having sufficient power; isn't that what it is?
A It is one criterion that one could use to evaluate the reliability of an electric system.
Q Okay. And so, now, can you tell us what the .1 per year means in that LOLP?
A It's a probability of one-tenth that you will not

be able to serve firm load on that day, commonly also referred to as one day in ten years that you will not be able to serve firm load on at least one day.

Q So it's a .1 standard. Let me turn now to the Staff's Second Interrogatory, number 55, which I think is Public Service Commission Exhibit 95.

CHAIRMAN GRAHAM: Do you have a copy of that?

MR. GUEST: I believe we do.

CHAIRMAN GRAHAM: So this one is already labeled 95, correct?

MR. GUEST: Yes.

MR. BUTLER: It's an excerpt from it.

MR. GUEST: Yeah, it's an excerpt, it's page -- tab one of one.

CHAIRMAN GRAHAM: All right. So then we'll label it 170.

(Exhibit 170 marked for identification.)

BY MR. GUEST:

Q And the standard LOLP is .1, but this table shows that in 2015 you're at not .1, you're at .000387.

A For which year?

Q 2015.

A That's correct.

Q So that means that you are about, what, 300 -- am I guessing right -- 300 times below the .1 standard in 2015?

A Considerably below in that year.

Q And then if you go all the way where it's worst case, it gets up to -- am I reading right -- 2021, and you're still five times lower there, aren't you?

A We are still under, but considerably closer to it.

Q Okay. One-fifth. So really isn't it the principle about this generation only; it's about the unreliability of non-generational power, isn't that right?

A In part, yes; in part, no.

Q Would you explain that, please?

A I will try. Commissioners, what led us to the generation only reserve margin was -- if you'll permit me, let me go back a few years. In 1999 we had an experience in the state of a very hot summer. We had a couple of utilities --

MR. MOYLE: I'm going to -- I'm going to interpose an objection on this. He's getting into a whole bunch of what I would characterize as direct testimony. I had asked him whether we had this issue, whether it was a live issue for you all to consider. I thought he said no, it's being filed in a ten-year site plan.

And now we've got this whole new set of information coming in through this witness. It wasn't prefiled. It's inappropriate.

CHAIRMAN GRAHAM: Well, the question was -- and he

answered it yes and no, and then he asked him to explain it, so I think he's going through explaining what the answer is, because he wasn't satisfied with yes or no.

MR. GUEST: Well, let me reconsider the question, under the circumstances. May I do that, have a moment to do that?

CHAIRMAN GRAHAM: Sure.

MR. BUTLER: Mr. Chairman, we're not, certainly, trying to push into this area. If he wants to withdraw the question, we're happy to withdraw that portion of the answer.

CHAIRMAN GRAHAM: He's going to rephrase it or ask a different question or just move on.

MR. GUEST: We have decided to withdraw it.

CHAIRMAN GRAHAM: Thank you.

BY MR. GUEST:

Q And that leaves me with just one question, then, which is, isn't it true that you have, in Florida Power and Light, you have 16 times the customers that there are in Gulf Power, in their territory?

A I don't know how many customers they have in Gulf.

MR. GUEST: This is going to take a minute. I think that was established in the cross of Ms. Tauber.

CHAIRMAN GRAHAM: Once again, he doesn't know.

BY MR. GUEST:

Q Okay, let's assume that that's the case. Assume that the testimony was true. That would mean that your goal of 59 gigawatt hours is actually less than Gulf's, even though they're 16 times bigger?

A It's possible. Again, I would say that no utility -- no two utility systems are alike, and in FPL's case, in an era of declining cost-effectiveness of DSM, that situation is even more pronounced for FPL's system due to the great strides we've made in generating electricity more efficiently and more cost-effectively. Therefore, one would expect, all else equal, we would have lower goals than another utility.

MR. GUEST: May I have a moment? I think I'm done here. Are we going to finish tonight?

CHAIRMAN GRAHAM: Yes.

MR. GUEST: Okay.

CHAIRMAN GRAHAM: Are you done?

MR. GUEST: I'm done. I have no further questions, sir.

CHAIRMAN GRAHAM: Thank you. Staff, do you have any questions?

MR. MURPHY: I have three minutes of questions.

CHAIRMAN GRAHAM: Tell you what, let's finish with your questions tomorrow. Because I think -- Commissioners, do you have any questions of this

witness? Yes? No?

MR. MURPHY: That was three minutes, not 30.

CHAIRMAN GRAHAM: Ask your questions.

MR. MURPHY: Thank you.

CROSS EXAMINATION

BY MR. MURPHY:

Q Dr. Sim, I'm Charlie Murphy for the Commission Staff.

A Good evening.

Q Good evening.

CHAIRMAN GRAHAM: Microphone.

MR. MURPHY: Get closer? Okay.

BY MR. MURPHY:

Q Do FPL's CO2 cost projections include the projected compliance costs for the proposed EPA rules, Clean Power Plan?

A No, the projected CO2 costs were developed by our consultant, ICF, prior to the issuance of the EPA's proposed regulations.

Q What effect might the proposed rules have on FPL's CO2 sensitivity analysis?

A Too early to tell.

Q Do you know when you might be able to complete a review of that?

A Each utility in the state is taking a look at

those proposed regulations right now. It will probably take, according to the schedule that we've discussed, a couple of months to see where we each will be.

However, at this time I can give you -- I can give the Commissioners an idea as to where FPL's projections sit in regard to meeting the EPA's Clean Power Plan.

Q You can?

A I can. And I can do it in probably two minutes.

MR. MOYLE: I think we're getting into the whole late-filed, you know, exhibit stuff. This is a proposed rule. It's not even out there yet, and he's being asked, as I understand it, to say what potentially could this mean. I mean, it calls for speculation.

You know, we've taken a position in this hearing it's appropriate to consider environmental issues that are in place as we sit here today, not what may happen at some point in the future. So we object to this line of questioning.

CHAIRMAN GRAHAM: This is a staff question, so I think I'm going to allow it.

BY MR. MURPHY:

Q Would you answer?

A Yes. The proposed targets for the State of Florida in 2020, as I understand them, are approximately 794 pounds per megawatt hour dropping to about 740 pounds per

megawatt hour by the final date of 2030.

By 2020, FPL, with no changes to the resource plan that we've presented in this docket, will be at or within a percent or two of the 2020 target and we will be considerably under the 2030 target. Again, the target is 740. We're projecting currently we'll be around the 660 mark, so we'll be considerably under it.

So, again, with the resource plan we have presented in this docket, with the DSM goals we've presented in this docket, FPL, as an individual utility, stands in very good shape in regard to the proposed regulations, even assuming no changes in certain criteria that EPA has proposed, for which we will be providing comments by the comment date, which would put us in an even a better situation.

Q Thank you. Changing gears, relying on your experience with demand-side management measures, do FPL's residential customers tend to implement measures that have a payback period of two years or less?

A I'm sorry, I'm not the right one to ask that question of. Mr. Koch would certainly have more experience in that area than I do.

MR. MURPHY: Okay, very well. Thanks. That's all.

CHAIRMAN GRAHAM: Commissioners? No questions? Rebuttal?

REDIRECT EXAMINATION

BY MS. CANO:

Q Just a few. I'll try to be quick. Could you please turn to what was labled as Exhibit 157? And that was the printout from the Lowe's website.

A The water heater blanket?

Q Yes, and specifically this is the Lowe's website, not the DOE website.

A Yes, I have it.

Q Okay. Does this printout show or are you independently aware of any customer satisfaction reviews, complaints, et cetera, on this particular product?

A I see nothing along that line of information presented on this page.

Q Okay, thank you. Turning to the DOE website printout, also on the water heater blankets.

A I have that in front of me.

Q Yes. Sorry, that was Exhibit Number 158. The information presented here in the middle of the page labeled Energy Savings shows a range?

A I'm sorry, which page are we on?

Q Yes, it would be -- it's numbered page one of five. It's the first page after the cover page.

A I'm there.

Q Energy Savings, in the middle of the page, is

presented as a range?

A That's correct.

Q Could you please explain why that information might be presented as a range by the DOE?

A There are probably a variety of factors, but two come to mind. One would be the electric rates for a particular utility. Savings -- all else equal, savings would be higher if you had higher electric rates than if you were installing the same blanket, the same usage, at a utility that had lower electric rates. And the other factor that immediately comes to mind would be how much your water heater usage was.

Q In the questioning on this exhibit, this measure was repeatedly referred to as cost-effective. Do you agree with that characterization, based on this information alone?

A I think it might be cost-effective for an individual participant. Again, that has no bearing on whether or not it is cost-effective to the general body of ratepayers.

Q Thank you. Finally, you were presented with the hypothetical where some advice was given over the radio to FPL's customers. Do you recall that line of questioning?

A Yes.

Q To your knowledge does FPL provide advice on energy savings measures through radio, TV, and other venues,

and other type delivery channels?

A Yes, through both printed means, radio, television, a variety of media that we provide information regarding energy saving mechanisms and practices.

Q Does FPL subject those campaigns to cost-effectiveness tests?

A To my knowledge, no.

Q In your opinion should FPL's goals be augmented to reflect some savings associated with the education that FPL provides?

A Should our goals be augmented? No.

MS. CANO: Okay, nothing further. Thank you.

CHAIRMAN GRAHAM: Okay, since you have your mic on, which exhibits do you want to enter into the record?

MS. CANO: One second. FPL would move Exhibits 2 through 17.

CHAIRMAN GRAHAM: We will enter Exhibits 2 through 17 into the record.

(Exhibits 2 through 17 admitted in evidence.)

CHAIRMAN GRAHAM: Is that all your exhibits?

MS. CANO: It is.

CHAIRMAN GRAHAM: SACE, what exhibits would you like to enter into the record?

MR. GUEST: 156 through through 170.

MS. CANO: FPL objects to numbers 157 and 158.

Those are the two website printouts. Neither was authenticated, both were used for hearsay purposes, and neither relates to the specific system cost assumptions used by Dr. Sim in his cost-effectiveness analyses.

Additionally, there appears to be some additional information, in particular on the Lowe's website, that isn't included in this exhibit here related to customer satisfaction on that measure.

CHAIRMAN GRAHAM: So 156 through 170, you're fine with everything but 157 and 158, is that correct?

MS. CANO: Let me do a quick check, but I believe that's correct. That's correct.

CHAIRMAN GRAHAM: I don't have a problem with that. Okay, Dr. Sim's --

(Exhibits 156, 159, 160 and 170 admitted in evidence.)

MR. GUEST: When you say you don't have a problem, you mean it's admitted in evidence, right?

CHAIRMAN GRAHAM: No, that means we're going to reject it.

MR. GUEST: Well, may I be heard on that?

CHAIRMAN GRAHAM: Sure.

MR. GUEST: I think that's admissible under the rules of evidence, under Rule 803. That rule says that when you have -- you have an exception to the hearsay rule when it's a government report, and this is plainly

what it is. It's on the website.

The test for authenticity is are there indicia of authenticity sufficient for a reasonable person to accept that it is what it says it is. It's got a web address on it. Anybody can simply look on their iphone and see that that's really there. That's as to 158. So there is -- it is absolutely admissible under the rules. That's my --

CHAIRMAN GRAHAM: If it's on the government website does that make it a report, or does that just make it on their website?

MR. GUEST: I think it makes it a report; sure it does.

CHAIRMAN GRAHAM: How about the Lowe's website?

MR. GUEST: Well, no, we don't need the Lowe's website. Yes, we don't need the Lowe's website, because the DOE website says the same thing.

CHAIRMAN GRAHAM: Okay, so 157 is out. Mary Anne?

MS. HELTON: Can I give you a recommendation tomorrow morning on that?

CHAIRMAN GRAHAM: Works for me. Okay, so we'll take up the exception of 158 tomorrow before we start with the next witness. Dr. Sim, thank you for your time.

THE WITNESS: Thank you.

(Witness excused)

CHAIRMAN GRAHAM: We are adjourned until tomorrow at eight -- is it 8:30? I'm sorry, is it 9:30 or 9:00?

MS. HELTON: 9:30.

CHAIRMAN GRAHAM: 9:30. We'll see you all here tomorrow at 9:30.

(The transcript continues in sequence in Volume 3.)

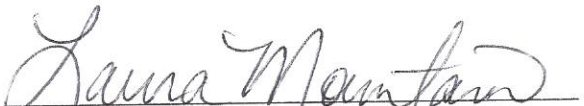
CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, LAURA MOUNTAIN, Court Reporter, do hereby certify that I was authorized to and did stenographically report the foregoing proceedings; and that the transcript is a true record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

Dated this 6th day of August, 2014.



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