BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. UNDOCKETED

In the Matter of:

EVALUATION OF THE COST EFFECTIVENESS OF UTILITY-SPONSORED ENERGY EFFICIENCY AND DEMAND-SIDE MANAGEMENT PROGRAMS
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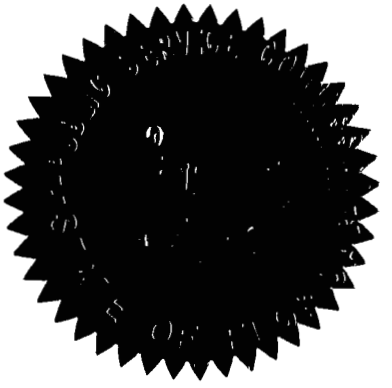

PROCEEDINGS: STAFF WORKSHOP

DATE: Thursday, April 25, 2008

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

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I N D E X

P R O C E E D I N G S

MR. FUTRELL: Okay, everybody, if we could get started with our workshop; if everybody could take their seats.

Good morning. I'm Mark Futrell with the Public Service Commission staff. I'd like to welcome you to our workshop this morning. This is a follow-up workshop to one the Commission held back in November, and this is part of a dialogue the Commission is going to have to encourage and develop ways to encourage additional savings from energy efficiency and demand-side management programs.

At that workshop, the Commission heard presentations on the current status of utility programs and recent actions in other states to encourage additional savings. Today we're going to focus on the methods that are used to analyze the costs and benefits of energy efficiency programs, and the staff is very interested to hear your ideas on how utility programs should be evaluated.

Our morning session is going to feature some formal presentations by interested parties. In the afternoon we're going to have an open roundtable discussion period.

I would also like to note that we want to welcome Mr. Snuller Price, whose appearance here has been arranged by the U.S. Environmental Protection Agency, and Mr. Price is a partner with the Energy and Environmental Economics, Inc. in San Francisco. It has a great deal of experience in the

analysis of energy efficiency and distributed resources. And Mr. Price will join us and participate in our discussion this afternoon.

Before we get started, I'd like to go over a few housekeeping matters. We have a sign-in sheet, which is right over here by Gary. If everyone would like to sign that so we can have a record of your participation. Also, so we can keep you on our contacts list, so that we can send out information that we have on upcoming workshops and information related to this workshop.

Also, the workshop is being transcribed. It's being taped, and then it will be transcribed. So when you speak, please come to a microphone, identify yourself clearly for the record. Also, we're going to post -- we've got materials over here with the agenda and the presentations. We'll also post this information on our website after this workshop. And there you will be able to find the agenda presentations, transcripts, audio links, as well.

We'll go ahead and get started with our presentations, and we want to start off with a presentation by our staff. Judy Harlow with our staff is going to give a brief background and context for today's discussion.

Judy.

MS. HARLOW: Thank you, Mark.

I've been tasked today with kind of setting the

discussion up. And as Mark said, I'm Judy Harlow with staff. I'm in the strategic projects group. Many of you know me from the power plant siting group, as well, and I was involved there with energy conservation matters.

The purpose of today's workshop, as Mr. Futrell stated, is to -- uh, I'm technology challenged -- is to discuss how the costs and benefits of utility-sponsored energy efficiency and DSM programs should be analyzed.

To kind of set up the discussion, I'd like to go through the Commission's procedures on how we handle DSM today and how this policy was developed, the three tests we use, also talk a little bit about the statutory authority we have and the proceedings that the PSC has in which these tests are used.

And following that very brief discussion, I would like to raise some questions that we hope that you will discuss in your formal presentations as well as in the open discussion we have this afternoon. And I'd also like to let you know that the staff will have more detailed questions this afternoon, and we're hoping to get some good responses on those questions.

If you want more detail on the slides that I have here today, I'd like to remind you that we had more detailed presentations on this by Mr. Futrell and Mr. Ballinger at the November 29th workshop. If you would like copies of those presentations, please let me know. My e-mail address is on the back of these slides.

The statutory authority that the Commission has, of course, as we all know, was established by Section 366.80 through .82, and that is known as the Florida Energy Efficiency and Conservation Act. You will often hear that referred to as FEECA, and you'll probably hear that word many times today as we go back to our statutory authority.

It requires the PSC to review and approve cost-effective utility conservation or demand-side management programs. It also requires the Commission to establish goals for seven utilities in the state. That is the five investor-owned, and it's also the two largest municipals; that's JEA and OUC. And that is based on a sales threshold.

An important piece of information about the statute is that it uses the term "cost-effective," but it does not define the term "cost-effective." And that term and how the Commission looks at that term has been developed over time here at the Commission.

Over the years, the Commission has developed policy on what is and is not considered cost-effective. The result of that was this rule that I've noted here, 25-17.008, Florida Administrative Code. And what this rule does, and you can find the rule on our web site, is it sets up a manual that establishes three cost-effectiveness tests. And it requires utilities that are seeking approval of a program to submit at a minimum the three tests. They can submit more information than

that, but they must at a minimum submit three tests. These tests are the participants, the ratepayer impact test, and also the total resource cost test.

Now, the participant test looks at cost-effectiveness from a participants in a utility-sponsored program's point of view. It is often used as a screening test. If a program does not or a measure does not pass the participants test, then you are not going to get participants in a program, because it's not in their best interest, for example, to put in a new air conditioner.

The ratepayer impact measure test looks at the costs and benefits from the point of view of the general body of ratepayers or the utility.

The total resource cost test is the two other tests combined. So it is looking at the costs and benefits from the point of view of a program participant as well as the general body of ratepayers.

The Commission uses these three tests in a number of proceedings. First, they are used in establishing numeric DSM goals. These are established every five years. The statute says at least every five years, and the Commission has been following a five-year schedule. We expect to establish the next goals in 2009. It's also used in approving DSM plans. These are plans with specific programs that are designed to meet the goals. Also in approving individual DSM programs,

often a utility will come up with a program in between the goal-setting process. They will bring that program before the Commission for approval.

Also, in the staff and the Commission's ongoing monitoring of programs, utilities must submit data on their programs at least once a year, and often the staff will ask for data in between those one-year reporting schedule periods. Also, in modifying DSM programs. If a program is no longer cost-effective, a utility is required to present a petition to the Commission with changes in that program, so that the program will either be dropped or will be changed so that it's cost-effective.

And, finally, these tests are used in need determinations for new generating capacity. The utility will present the results of these tests in order to provide evidence that there are no cost-effective demand-side management programs that could either avoid or defer the proposed unit.

This slide is just a compilation of the three tests so that you can see the benefits and costs that the Commission uses to look at each test, and I'll go over this very quickly, because I think you have probably heard this five times within recent months. So the participants test, as I said, looks at the program from the point of view of a participant in a utility program. So the benefits to that individual, and this could be a residential or a business customer or an industrial

customer, are the reductions in the bill because of energy savings from whatever the device is, and, also, any incentives received from the utility. The costs to the customer are their own costs to put in whatever this energy saving measure is. So if we are talking about an air-conditioning program, the customer could have received a rebate from his utility, but he would have to -- he or she would have to provide the remaining cost of that new air conditioner.

Next is the ratepayer impact test, looking at it from the point of view of the utility costs that translates to rate impact on ratepayers. The benefits are the avoided costs of the avoided unit itself, and that includes any generation reduction in capital costs, any transmission cost reduction, distribution, and also any fuel savings. The costs are the costs to run the program itself. These could be, for example, administrative costs, marketing costs. Also, you see system fuel cost increase.

I remember when I started in conservation this caused some concern for me. I didn't really understand how you could get a fuel cost increase if you had a conservation program. But if you are deferring a new unit that is highly fuel efficient, you may be running existing units more than you would otherwise have. So that can increase your system fuel costs in the initial years when you are deferring that new unit.

Also, those incentives paid to the participating customers. Lost revenues, this is from the energy savings. The customer is not using as much energy because of fuel savings or -- excuse me, conservation measure, so that reduces the utility's revenues.

Then if you look at the TRC test, the TRC test is the combined participants and RIM tests. The benefits are exactly the same as the RIM test. Where we see the difference is in the costs. And the reason for that is that the bill reductions and the incentives received, and then on the benefits side of the participant and the cost side of the RIM test, the incentives paid and lost revenues cancel out. These are simply a dollar transfer between two parties that are looked at within the test. I would also like to note that for avoided costs the Commission is using the next avoided unit as the avoided cost.

Now, often in the past we have had interested persons in our proceedings say that the Commission should use a societal test or a TRC test, but they have also advanced the societal test, and the reason for this is we have had parties believe that the Commission should include non-economic benefits and costs. These are also referred to as externalities.

I'd like to note that the TRC test that the Commission uses in our manual allows for the inclusion of externalities, the calculation of the test, but the PSC has not

quantified a value for externalities in the past, and we are not doing so today.

But another thing to note is that as we have new laws and new statutes that involve environmental concerns, those costs are built into the Commission's RIM test and, also, into the TRC test. So, for example, if you have a new law, such as the Clean Air Act that required the cap and trade system on SO2, those allowances and also any equipment that the utility is using on the next avoided unit, the costs of those would be built into the test. But currently any kind of emissions that we do not have a statute on, for example, greenhouse gases, those costs are not currently included.

These are the five basic questions we'd like to look at today. As I said earlier, we'll have more detailed questions from the staff this afternoon. What we would like you to do with these questions is, as you are making your formal presentations keep these questions in mind. Also, this afternoon when we have the open discussion we would like to discuss these questions. And, finally, you will have an opportunity for written comments after the workshop, and we would like it if you would structure your comments to address these questions.

We've found that with the renewable portfolio standard workshops, it was really helpful to us to have the written comments structured and where everyone was structuring

their comments in a similar way. It was so easy for us to compare your comments to each other and summarize those for our Commissioners.

The first question is: What is each cost-effectiveness test designed to achieve? If you are suggesting that the Commission should use a new test, we are looking for the philosophy of that test from you. For example, the ratepayer impact test, the philosophy is to hold the ratepayer harmless. So we're looking at why do you think that we should use this new test? If you believe that we should continue using the current methodology, we'd like you to express why.

The second question is: Are the tests capturing all the benefits and costs of energy efficiency and DSM? If you believe that the test that the Commission is using should be changed, we'd like you to tell us what specific cost or benefit you think is being omitted from the current methodology or, if you have your own methodology, explain to us why it's capturing something that the Commission's methodology is not currently capturing.

The third question is: How do the tests used affect the level of conservation goals? We want you to tell us if you have a new methodology what do you believe the effect would be on the goals that the Commission sets every five years. We are also interested in if you have any information on the impact on

rates or the general body of ratepayers, what would that be.

The fourth question is: Should the tests be modified to address other concerns? You may have other concerns that you believe are not currently being captured in the three tests that the Commission uses. One example of this might be fuel diversity benefits.

And, finally, the question that I posed earlier with the societal test is: Should non-economic benefits and costs or externalities be included, and if so, how? Don't just tell us -- please don't just tell us that you think we should look at non-economic benefits. We want some specifics on your point of view. Which types of non-economic benefits do you believe should be looked at? Who should look at those costs and benefits? How should they be calculated? Give us any specifics you have on methodology and types of non-economic benefits that you believe it is important for the Commission to look at in its proceedings here.

And then, finally, mainly for your convenience, I've put these dates on the slide so you would have a copy and also our contact information. At the close of the workshop, Mr. Futrell will go over the next steps that the staff and the Commission expect to take, but I did want you to realize that the transcript from this will be available on the 12th of May. We expect to e-mail that link to our contact list, we have an e-mail contact list, so please be sure and put your name and

your e-mail address on our sign-up sheet so that we can add you to our contact list and keep you informed.

We would like your written comments, if you have any, by May 21st. I'd like it if you would address the questions, the five basic questions in our presentation. Also, any specific question you hear from the staff this afternoon that you would like to address that would be of interest to us. And please send your comments by e-mail to Mr. Futrell and also myself, Judy Harlow, and I have provided our e-mail addresses.

And I thank you very much for your participation today. And I'm sorry it is a little warm in the building, but we're trying to conserve energy. We though that would be appropriate, to keep everybody a little warm today.

So I believe Mr. Futrell will now introduce the speakers.

MR. FUTRELL: Thank you, Judy.

And I do want to thank all the speakers up front for agreeing to participate in the workshop today. We have got a good group and we look forward to hearing your comments. I would ask and remind you that we have an agenda that we'd like to try to keep as close to as possible, and so if you would, as you make your remarks, keep that in mind. But we will start off this morning with a presentation by Ms. Susan Glickman, who is with the Climate Group.

Susan.

MS. GLICKMAN: Good morning. I'm Susan Glickman. I am the U.S. Southern Region Director for the Climate Group. And the Climate Group is the only international non-governmental organization devoted solely to climate change. We have offices in China and India and Australia and North America. And our mission is to accelerate a low carbon economy. And our members are some of the largest businesses in the world, Nike and Johnson & Johnson, Dow, Dupont, Dell, Virgin Airlines, Google, Rupert Murdoch's News Corporation, BP Bloomberg, and Florida Power and Light, who have chosen to reduce their energy use perhaps not so much because it reduces their carbon footprint, because becoming more efficient saves them money and makes them even more competitive.

I want to thank you, Mark, and Judy and others for holding this workshop in order to evaluate the cost-effectiveness of utility-sponsored energy efficiency and demand-side management programs, so today we can explore policies which will allow Florida to capture more end use energy efficiency.

Energy efficiency provides Florida the very best opportunity to significantly reduce greenhouse gas emissions in the fastest and most cost-effective way, while at the same time keeping customer prices low and providing incentives for investment in green collar jobs right here in Florida.

I'd like to start out with the acknowledgment that we

are really on new territory here, and it is quite understandable why the Public Service Commission has previously examined energy efficiency programs in the manner that they have. But underpinning today's discussion and the presentations of my colleagues to follow is this new understanding of the need to reduce greenhouse gas emissions. And so that you know, my comments today are going to lay the groundwork for a number of the presentations to follow, and we're doing this in that way so as not to be repetitive and to cover lots of territory over the course of the day.

So there have been many new developments in our understanding of this imperative, such as the Supreme Court Decision, EPA versus Massachusetts, that has ruled that the EPA has the authority to regulate greenhouse gas emissions. Back in 2005, the U.S. Senate passed a sense of the Senate resolution on climate agreeing to move past the scientific debate and onto solutions, one of which is the design of a cap and trade system.

I'm going to speak to the International Panel on Climate Changes' Assessment, the IPCC, in a minute, but it hasn't passed us by that a chunk of Antarctic ice about the size of Manhattan suddenly collapsed in late March as a result of global warming. The Wilkins Ice Sheet, a 160-square-mile chunk of ice located in western Antarctica, began to show signs of deterioration via satellite images on February 28th.

Scientists have thought that the Wilkins ice shelf would collapse in about 15 years from now and it surprised us.

Governor Crist right here in the state of Florida has shown great leadership in positioning Florida to take advantage of the clean energy economy and to ready itself with the constraints on carbon that are on the horizon while addressing the growing threat caused by greenhouse gas emissions. And right up the street, the Legislature appears to be meeting with the Governor's leadership with numerous measures which deal with climate change and energy, not the least of which is initial rulemaking on cap and trade and a renewable portfolio standard. Under the proposed bill even local governments will consider climate and energy in their comprehensive planning processes.

The Governor has set a goal of reducing greenhouse gas emissions in Florida from the utility sector by 80 percent below 1990 levels by 2050. I am often asked how the Governor came to these numbers. Admittedly they are very steep. I'm a native Floridian. I was born in Tampa. The concept of taking Florida back 18 years ago to 1990 levels and then achieving an 80 percent reduction below that, that's a daunting task.

Well, the Governor selected those numbers for a reason and all the right reasons. It's because that's what the scientists tell us we need to do to avoid the worst implications of global warming. He realizes that Florida is on

the front lines of climate change, especially rising sea levels on our 1,200 miles of coastline. I'm currently editing a book by a University of Miami professor, (inaudible), on sea level rise, and I assure you for more than one reason it is keeping me up late at night.

Energy efficiency will play a critical role in meeting that target. Energy efficiency allows us to meet our growth demand while renewables have a chance to develop and capture a more significant segment in the market. The fact is, we won't get where we need to go unless we capture every last drop of available cost-effective energy efficiency and that defines our imperative here today.

Judy will see if I'm -- oh, good. I figured that out.

I mentioned the IPCC. The target of reducing worldwide greenhouse gas emissions by approximately 80 percent by 2050 is consistent with the IPCC's finding of what we need to do to stabilize carbon concentrations in the atmosphere to avoid the worst implications of global climate change. Established in 1988 by the United Nations, the IPCC comprises 2,000 climate experts and scientists from around the world who are charged with assessing the technical issues of global warming and providing policymakers with guidance on mitigation options. Presidents Ronald Reagan and George Herbert Walker Bush endorsed the formation of the IPCC to ensure thorough and

a fair review of emerging scientific findings on climate change.

And just recently renowned NASA scientist, Dr. James Hansen, concluded that we have to limit our CO2 emissions to 350 parts per million of carbon in the atmosphere to avoid the worst impacts of climate change. He stated if humanity wishes to preserve a planet similar to that on which civilization developed and to which life on earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO2 will need to be reduced from its current 385 parts per million to almost 350.

Dr. Hansen recently sent a letter to Jim Rogers of Duke Energy where he extolled the virtues of clean energy, saying near term demands for energy can be satisfied via a real emphasis on energy efficiency and renewable energy. Neither carbon sequestration, nor nuclear power can help in the near term, and they both have serious issues even over the longer term. But near term energy needs can be met with massive but feasible conservation and efficiency programs, cogeneration, solar, wind and biomass generation. Diversifying generation has other benefits, as well; creating jobs, conserving water, and minimizing the possibility of terrorist acts against the grid.

The other thing, and the Public Service Commission, of course, looks very heavily at the economics of all of this,

so let's just talk for a minute about the cost of action versus the cost of inaction. In 2006, economist Sir Nicholas Stern put out the Stern Review, which got a lot of wide attention. He suggested that the impacts of global warming could shrink the global economy by 20 percent, but his assessment was that taking action now would cost just one percent of global domestic product. A lot of the evidence out there is pushing us to take as quick of action as possible in order to avoid the economic negative effects of this, as well.

Just this week Environmental Defense, another conservation -- a national conservation organization, released a report that found that the overall cost of capping greenhouse gases for the average family would amount to less than one percent of household budgets over the next two decades, and that the total number of jobs impacted by climate policy in the manufacturing sector over 20 years is substantially below the number of jobs created and destroyed in the sector every three months. Household electricity and natural gas bills rise by only a few dollars a month over the next few decades, well within the rise and fall that homeowners already experience.

In short, under business as usual the total output of the U.S. economy is projected to reach 26 trillion in January of 2030. With a cap on greenhouse gas emissions, the economy will get there by April, a difference of three months.

McKinsey and Company, a very, very renowned business

consulting firm, tells us that in the next 20 years the U.S. is expected to invest more than $3 trillion in expanding and retooling its energy infrastructure, electric power plants, fuel refineries, transmission and transportation infrastructure, as well as billions more on energy consuming buildings, vehicles, appliances. Directing those resources toward cleaner energy efficiency technologies and development patterns is critical if we are going to meet our global warming challenge in time.

So the next slide is, I think, the most important thing that I'm probably going to say, and this is the cost abatement curve by McKinsey and Company, which examines the cost and market potential of more than 250 greenhouse gas abatement technologies. And it concludes that the United States can do its part to stabilize the climate at little to no cost, considering energy efficiency savings. In sharp contrast, estimates of the annual cost of failing to stop global warming range as high as 20 percent of total economic output. So in simple layman's terms, we need to get everything and capture everything below the line so all the energy efficiency --

Whoops. I have a pointer. How exciting. There. There we go. That's the road map.

The Energy Power Research Institute in conjunction with the Edison Electric Institute -- and those are both

utility trade groups, for anyone in this room that doesn't know that, just this week released a study showing that the technical potential for energy efficiency on a national level is 23 percent of total demand by 2030. The report in many ways corroborates the study by the American Council for an Energy Efficient Economy that was released in July of last year that found the technical potential in Florida to be around 20 percent of total demand to be met by energy efficiency by 2023.

An important co-benefit of energy efficiency investment cited by the ACEEE is economic development. Increased investments to reach the 2023 energy efficiency goal would reduce consumer energy costs by over $28 billion over the next 15 years and create an estimated 14,264 new jobs. These new jobs would be equivalent to nearly 100 new manufacturing plants relocating to Florida, but without the demand for infrastructure and other energy needs.

Perhaps the most important co-benefit of energy efficiency is that it is less expensive than the required new generation that it displaces. As evidenced by this slide, many cost-effective energy efficiency measure investments are in the three to four cents per kilowatt hour range, significantly less rate impact than new generation, especially nuclear generation that is about 11 to 12 cents per kilowatt hour. And this kilowatt hour estimate for nuclear is actually considered low, because it hasn't taken into consideration all the recent

construction cost spikes.

So, in conclusion, reducing global warming pollution 80 percent below where we were 18 years ago by mid-century will require the United States to substantially transform how we create and how we consume energy. This transformation will lead us to a cleaner and more efficient energy efficient economy; it will improve air and water quality; it will protect public health; it will increase our energy security and productivity, all while we continue to grow our economy as forecasted decade after decade. But we will only achieve this shift to clean energy if we set the rules and regulations right to capture all cost-effective energy efficiency. That's why we're here today, and what we are doing has consequences not only for our state, but for our world.

Thank you very much.

MR. FUTRELL: Thank you, Susan.

And next up we have Ms. Holly Binns with Environment Florida.

Holly, welcome.

MS. BINNS: Good morning. My name is Holly Binns, and I oversee the climate and clean energy programs with Environment Florida, which is a statewide non-profit organization with more than 20,000 members and activists across the state.

And I wanted to start by thanking you, Mark, and Judy

and others for putting together this workshop, which I think really is one of the best opportunities that we have to put Florida on the path to a smarter and a cleaner energy future.

Between now and 2030, electricity consumption in Florida is expected to increase significantly. According to the U.S. Department of Energy, Florida's electricity needs are growing by about 2.2 percent per year. DOE predicts that Florida will use 38 percent more electricity in 2020 than it did in 2005, and population growth isn't enough to account for this projected increase in energy demand alone.

According to the U.S. Census Bureau's projections, Florida's population will grow by about 1.2 percent per year through 2025. Demand growth is also due to increased electricity use per person. But using more energy is not the only option to achieve a vigorous economy and a sound standard of living. Instead, we can reduce our consumption of energy dramatically, and we can do it without sacrificing our quality of life. Over the past two decades, America has consistently used less energy to produce more economic wealth.

In 1980, the U.S. used 15,000 Btu for every dollar in gross domestic product. By 2004, we were using only 9,300 Btu, a drop of more than one-third. To meet Florida's growing electricity demand, to control price increases, and to meet Governor Crist's greenhouse gas reduction goals, it is critical that energy efficiency play a much bigger role in Florida's

energy portfolio.

As everyone here knows, Florida passed a law in 1980 to require large electric utilities to invest in load management and energy efficiency programs. The law known as the Florida Energy Efficiency and Conservation Act has reduced the need to build new power plants in Florida. However, flaws in its design prevent it from truly capitalizing on energy efficiency as a serious part of Florida's electricity system. Under the law the Florida PSC sets numerical targets for peak demand reductions and for efficiency improvements and utilities develop programs to meet them.

The Public Service Commission has to judge these utility programs to be cost-effective before they can go into effect. However, the rate impact measure, which has been one of the primary screens, includes consideration of lost revenues for the electric utilities due to reduced sales. And as a result, measures that reduce utility revenues which are tied to sales, while reducing Florida's electricity consumption, are left largely untouched. Thus, the law is really limited in its ability to reduce overall energy consumption.

Since 1980, FEECA has eliminated the need for about ten medium-sized power plants, about 500 megawatts each, by reducing peak demand primarily through load shifting. The law has been much less effective at reducing total electricity consumption, achieving cumulative savings of only 5,500

gigawatt hours since 1980, which is equivalent to about two-and-a-half percent of Florida's electricity demand in the single year of 2005.

Florida's per capita residential electricity demand is among the highest in the country. This is due in part to high air-conditioning use during the hot summer months and the widespread use of electricity for home heating during winter months. According to the Energy Information Administration, the average retail price for electricity in Florida is about 10-1/2 cents per kilowatt hour, with residential customers paying just over 11 cents per kilowatt hour and industrial customers paying an average of seven cents per kilowatt hour.

If customers have access to products that use less electricity, they may be able to pay higher rates for the electricity that those products consume and still emerge with lower overall bills. However, there are many well-documented market barriers that prevent consumers from taking advantage of these efficiency opportunities. Things like information barriers, split incentives between builders and homeowners or landlords and tenants, in which one buys the equipment and the other must pay operating costs, and the need to pay for improved energy efficiency up front versus over time. And their efficiency programs are really necessary to overcome these barriers.

Well-designed efficiency programs take these barriers

head-on. They educate consumers, they reduce split incentives, and they provide subsidies that reduce upfront costs, all of which systematically drive the penetration of efficient technologies into the marketplace where they can make the greatest difference. Supplemented with policy changes like appliance efficiency standards, updated building codes, and related measures, efficiency programs can make and produce dramatic results.

The potential for reducing overall electricity consumption in Florida through energy efficiency improvements and conservation measures is really immense. And I think that comparing Florida to California can give us some idea of what might be achieved. The gap between California and Florida in per capita residential energy use represents a huge opportunity to reduce Florida's overall energy consumption.

The residential sector is an especially important part of Florida's overall electricity consumption patterns. Residential customers make up an unusually large part of the customer base compared to other states. Households purchase over half of the state's electricity, while industry only makes up about 11 percent of the state's demand, and the remainder comes from the commercial sector.

California leads the nation in effective implementation of energy efficiency. They were the first state to adopt energy efficiency standards for home appliances. They

have the nation's most stringent building efficiency codes, and they have long had well-funded, aggressive programs for promoting energy efficiency.

California's approach to energy efficiency has really yielded some startling results, as well. On a per-capita basis, residential energy use in California declined by 28 percent per capita between 1975 and 2003. However, in Florida per-capita residential energy use increased by 44 percent during the same period. If Florida had achieved the same per-capita percentage reduction in residential energy used between 1975 and 2003, as California did, Florida households would have consumed over 650 trillion Btu less energy in 2003, or half as much. Moreover, total overall residential energy consumption of Florida would have increased by only 42 percent, rather than by the 184 percent that it has.

Florida really has vast untapped strategic reserves of energy efficiency. However, it is unlikely that Florida could tap into 100 percent of this efficiency potential even though it would be cost-effective. To produce an estimate of the level of savings that Florida could be reasonably expected to achieve, the American Council for an Energy Efficient Economy evaluated the impact of a set of energy efficiency policies that Florida could implement, and the resulting savings were still quite substantial.

ACEEE considered that Florida could capture more than

half of the economic potential for energy savings, reducing its electricity consumption by nearly 20 percent below forecast levels within the next 15 years. Using the measures identified by ACEEE, Florida could reduce growth in electricity demand from 2.2 percent per year to just 0.9 percent per year, cutting forecast additional need for electricity by nearly 65 percent. Under the ACEEE package, Florida would use 65,800 fewer gigawatt hours of electricity in 2023 than under a business as usual forecast.

Energy savings can function like virtual power plants or virtual natural gas pipelines though without the need to build the costly additional infrastructure. Efficiency programs can also reduce energy prices for everyone. For example, for every one percent reduction in natural gas demand, it reduces the market prices by .8 to 2 percent below forecast levels, and that's a big factor for Florida where we are heavily reliant on natural gas to fuel many of our power plants.

An additional benefit is that energy efficiency can be deployed quickly to help avert an energy crisis or to help, you know, make up some demand needs. For example, when California was facing an ongoing electric utility blackout in the summer of 2000, state leaders really launched a big campaign to educate Californians on how to use energy more efficiently and how to use those energy resources more

efficiently. And the result was pretty astounding. Within 12 months, electricity demand in California declined by 14 percent. That's equivalent to the output of ten large power plants.

Many utilities across the country are achieving very significant annual energy savings through demand-side management programs. According to the Department of Energy data from 2006, a number of utilities reduced their annual electricity demand growth on the order of one percent or more. By contrast, Florida utilities are well-below one percent of demand for that same year. The Florida utility with the best result is the City of Tallahassee at 0.4 percent.

Many Florida utilities have not capitalized on the potential for energy efficiency to reduce per capita electricity use because the rate impact measure counts the potential lost utility revenues that result from reduced sales or avoided capital projects like new power plants as a cost rather than as a bill savings benefit for ratepayers. Thus, many efficiency programs and measures that cost less in new generation are not captured.

The American Council for an Energy Efficient Economy estimates that an achievable package of energy efficiency policies would produce savings at a levelized cost of 3.6 cents per kilowatt hour compared to Florida's average retail price of 10 cents per kilowatt hour. Energy efficiency programs are

more than twice as cost-effective as new power plants.

So, in conclusion, energy efficiency programs have a ton of potential here in Florida. They can help homeowners and businesses tap into vast potential energy savings, and they can offset upfront costs, and they can deliver long-term savings on energy bills.

So I think I'll wrap up there, let my colleagues take it from here, and to say thank you to Mark and Judy and the rest of the staff who have put this workshop together.

MR. FUTRELL: Thank you, Holly.

Next we have former chairman of the Public Service Commission, Mr. Leon Jacobs.

Commissioner, if you would like to join us. Thank you for being here.

MR. JACOBS: Good morning.

I, again, would like to offer my thanks to Chairman Carter, Commissioners, and staff for providing this opportunity to discuss what I believe is one of the fundamental issues that we can look to to solve many of the needs that we're going to have to deal with in the next coming few years.

The fundamental message I would like to just leave with you is that I think that the opportunity to expand the role of energy efficiency in the energy portfolio of Florida is the fundamental opportunity in the short term. It is the least-cost resource that we can bring to address what are the

issues that this Commission has identified to be the fundamental hurdles in the energy sector, the concentration in natural gas, the precipitous rise in consumption, the globalization of the energy markets. And the concern has been that energy efficiency is a detriment to that, and I would like to suggest to you that it is the fundamental benefit to that.

Let me just summarize on some of the issues that I think are before us. The energy policy in this state has been struggling to come into a consensus. There are many piece parts that try to operate together. At the same time, the externalities have really taken control of the debate. That has caused now these issues to cover a vast scope with varying metrics and dynamics.

We are most challenged by the phenomenal growth in demand, most measured by peak demand. But as Holly was very eloquently in showing, there is an underriding concern because of growing average household consumption, which I think is the fundamental piece that we need to look at. Even though, yes, we're having more population, we're having more people, but our fundamental concern is that average household consumption is rising incredibly. In a recent filing by Florida Power and Light in the need determination for the new gas plant, I think they projected a 16 percent rise in consumption over the ten-year planning cycle.

We have now a very highly complex global market,

mostly for the fuels. We input all of our fuels, and every quiver in the international marketplace gets felt as a shock here in Florida, because we see it, and we see it sometimes twice over.

Holly also mentioned this, I won't stay on it long, but I want to really emphasize here how Florida jumps out here, and I want to contrast it with some of the states here who have looked at this issue from another perspective. Florida's average household consumption in '93 was 52.1 million Btus, and New York was 121, California was 65. California was already in the throes of looking at how to deal with their concerns from a more -- from a demand side of the curve than the supply side, and they were already looking at aggressive ways of implementing demand-side strategies, most importantly DSM and energy efficiency. New York came along in that debate not too long after that.

So for Florida we see real results of those strategies. In Florida we more than tripled our average household consumption. California has really reduced it, and New York has significantly reduced theirs. Texas has grown substantially, and I think they've learned that lesson now, because they are very aggressively looking at alternative energy and demand-side issues.

Florida has consistently looked at this issue from the supply side of the curve, and we decided in too many cases

that the way to do this is to build our way out of our growth patterns. If we do that, we would have to build -- now I think it is more than 45 now, but at least 45 new 500 megawatt plants. If we can find the land, the water, and the capital to build those, all is well, all is good. And if we can do that in a marketplace that will keep the price to build those plants stable as we build them, all is well and all is good. That doesn't exist today. And I think that's a fundamental planning and resource issue that we must deal with.

In addition to that, Florida has some particular challenges that we have to address ourselves. Although this is a matter for debate, I don't think there is much debate on this anymore that we do have to deal with transmission in this state, particularly if we are planning to build as many new plants as were projected. The epitome of that is the addition of the nuclear plants that are planned.

Fuel diversity. It is a correct concern that we have devoted so much of our resource allocation to the natural gas. I think it's not necessarily a bad decision, but as the markets have evolved, it is a planning challenge that we do have to deal with. And we, of course, cannot run away anymore from the idea that there will be more significant regulation of environmental issues regarding our electric plants. So these are fundamental challenges.

And there are more. The water issue in Florida,

while not as deeply entrenched from the industry as in some of the other southeastern states, it is not an insignificant problem. And, of course, there are other issues in terms of just space.

So we want to applaud the industry and the Commission. Far from being the idea that there has been no effort, there has been failed effort; there has been efforts and, in fact, the wonderful point to make today is that even those efforts that have been done have yielded positive benefits. Now, we want to capture that, and we believe this cost-effective and economic -- that you should seize upon the benefits that have already been accomplished and expand those.

We know that demand has been reduced by DSM programs. We know that we've seen the cost of those DSM programs have become much more effective for us to adopt. And we now see the companies filing more DSM programs. Those are good things, but we think we can do better.

So the fundamental questions are what should it be, what should it cost, and what does it save? One of the ways that traditionally those questions have been answered is, and particularly in jurisdictions that have chosen to go more aggressively in energy efficiency, they go out and do something called a potential or in-use study. And they look very specifically at what does their marketplace look like? What can they expect? What particular DSM mechanisms and programs

should be focused on when they go out?

One of the things that they want to be very sure they look at is what are the real achievable potential savings? And what they do there is they look at what is likely the timing of the equipment -- is the technology there? Is it available? What is the timing on it? How the life cycle of that equipment is going to be. What would be the change-out of it? What is the likelihood that consumers will use that equipment when it's introduced to them. How long will they put it to use? Will it be used in maximum and peak times when exactly that is what is needed. So those are the critical questions that I say that we want to make sure we address. I would recommend that there is a need, and I would highly suggest that in addition to looking at RIM and going to a more aggressive cost-effectiveness test, there is a need for a potential, a honest-to-goodness.

Now, we have some data that's out there. There is one study entitled "Powering the Southeast" that has been done. ACEEE, American Council for Energy Efficiency -- something, they've done -- that Holly mentioned, they've done a study. So the data is out there, and that data gives us some very positive suggestions, but we want to suggest to you that there's probably a need to do more.

Now, a very respected consulting firm, Navigant Consulting, did a survey of some of the prevailing potential studies that are out there, and, in fact, they did it in

conjunction with work that they did for the City of Tallahassee that will be spoken about more later. But they came back with some very interesting results. What they came back to see was that for the southeastern states that they've developed an achievable potential savings of at least .26 percent -- I'm sorry, dollars per kilowatt hour, 2.6 cents per kilowatt hour.

There was another study done for ACEEE, and this was done to look at the crisis that evolved in the midwest originally when the natural gas prices spiked. That study came back and showed for residential there was 4.4 cents potential savings for residential, 2.4 for commercial. ACEEE also did one -- I believe this one was maybe Florida-specific, I'm not sure. The 2003 study may have been Florida-specific. But, anyway, they did a 5 cents potential kWh savings in residential and 2.9 for commercial.

Now, the Western Governors' Association in California and Connecticut have been very aggressive for years. And their programs are in place. They can see now what mechanism and what DSM things are working. And they are coming back and showing hard results. Southern California Edison has -- these are utility-sponsored programs, are showing real savings of 3 cents per kWh. Pacific Gas and Electric, for their plans are showing real savings of 3.7 cents per kWh.

So the idea that we are throwing Florida into some kind of economic chaos by expanding the role that energy

efficiency will play in our energy efficiency portfolio, I suggest to you is not supported by the real data that we can see. But, to remove that doubt, I highly recommend that we engage in an honest-to-goodness real -- honest-to-goodness potential study for Florida.

Now, there are some other states, and Holly mentioned some of these also. I won't belabor this, but I think the data begins to really just compound itself and become very evident that there are real honest-to-goodness savings out there when we look at true implementation of energy efficiency.

So we believe that it is vitally important now in Florida that we begin to look at energy efficiency, and we look at it from the lifecycle perspective. One of the fundamental issues in the diversion that staff has identified when it chose to look at a RIM screen versus a TRC was that rate impact idea. Well, we believe if you take the look and measure energy efficiency from the lifecycle perspective, look at its costs and benefits over the lifecycle of those programs, we believe that you will see the kind of savings that other jurisdictions are finding in Florida. And we believe that now is the time -- it has been the time, but we absolutely believe that now is the time more than ever before to do that.

So we are looking forward for the future. We think the opportunity is here, it is now. We believe that this also can lead us to some more advantageous opportunities for the

future, for more integrated planning in the whole energy portfolio. The more development of a sustained marketplace for these technologies, particularly in the commercial side. In Florida, my perception of it is that on the commercial side there is incredible opportunity to look at the motives that are out there and upgrading of those kinds of -- and energy building envelopes. Say that twice.

The cultivation of renewables and distributed generation. Given what we know to be the concerns with regard to weather issues, these have to be issues that we have got to look at in the near future. And I think looking at energy efficiency in a more positive light brings us to these new strategies.

As we've said before, there are hundreds of untapped megawatt savings as a result of underutilization of energy efficiency. We believe now is the time for Florida, and we believe that the marketplace presents us with the opportunity.

We thank you, and we look forward for the rest of the day's discussion.

MR. FUTRELL: Thank you.

Next we have Mr. John Wilson, and John is with the Southern Alliance for Clean Energy.

Welcome, John.

MR. WILSON: Thank you.

I direct the research program at our organization and

work in five states across the southeast. And it's my pleasure to be here today, and I appreciate the time and interest of the Commission in our perspective on these issues. And I also appreciate the fact that these are very complex issues and you guys have got a big year ahead of you, so we're happy to work with you and appreciate the extra hours you're probably going to be burning on this topic this year.

We are here this year -- these colors are not working on this projector, are they? This is going to be a tough presentation. They look great on my screen.

We are here to support the efforts of the Commission and the utilities in developing a new future for Florida's energy. And across the southeast I think we are really at a fork in the road on energy issues. We have well over a dozen new proposals for nuclear power units. We have several large coal plants still in the proposal stage. These are very expensive resources. That's one direction we can choose.

And the other direction we can choose is what has been talked about today, which is energy efficiency. And we know that that is a very low cost resource, but it's one that feels a little bit more difficult to handle, all the more difficult to regulate and direct from the top, if you're the Commission staff, or even from the utility side if you're thinking about needing to be able to flip switches on and off.

It's a different way to think of things. And I don't

envy the staff, especially the managerial staff of the utilities who need to plan for both directions right now. They need to plan for their company to be financially successful in either future. So they've got a big job ahead of them. For me, I've got a little easier job, because I know which one I want. And I'm here to convince you that it is the right one and that there is a good way to do it, and that you can address everyone's concerns satisfactorily, maybe not perfectly, but satisfactorily by taking this direction.

We think a good energy efficiency program -- and by here, I mean the whole system approach at a utility -- should be cost-effective for the customers. It needs to be fair for all different types of customers. It needs to offer attractive, but not excessive returns to the utility, and it needs to lead to real and substantial energy savings, not just peak demand savings.

And I want to talk a little bit about the question that is before us today, which is the cost-effectiveness determination. There are basically three general categories. I think the presentation by the staff earlier effectively laid out the more detailed view of this, but I think there is really three basic areas where this needs to be dealt with.

First is at the system level. What is the system's commitment to demand-side management? And, of course, that would be portrayed in an integrated resource plan. It would be

portrayed in the DSM plan that is required under the Florida Energy Conservation Act. It also would probably play out in the certification hearings for larger power plants.

Second, you have got more of the program level. The residential new construction program, a commercial and industrial program, the sort of big picture programs that tie together lots of smaller activities of the utilities. And, again, you've got sort of the prospective approach there where you need to figure out is this program cost-effective? Should we authorize the utility to operate it? And then you've got the evaluation program. Are there ways to improve it. After it has been operating for a couple of years, does the Commission or the utility want to suggest a different direction to go to make it better.

And then, finally, you've got another general purpose of the cost-effectiveness definition, which is at the measure level. And this is really guided by the program approval, but in the field how are decisions made on a day-to-day basis about we have got a new lighting product that is available. Should we use it? Should we get rid of some of the other ones? I'm at a site, and I was planning on doing a building envelope project, but lo and behold, there are some other opportunities that are here, and we can get them done real quick while we're here. Should we do it or not? Quick managerial field level decisions, this is also a cost-effectiveness question that

needs to be thought about. And I'm going to suggest that there are different answers that are consistent with each other, but are different at each of these levels in terms of how we need to think about cost-effectiveness.

And I think, also, it's important to acknowledge that there is no overriding single goal that should be our focus. Of course, our concern is with energy efficiency, because we are very concerned about reducing energy use to address the problem of global warming pollution. We also recognize that we have got energy security concerns with almost all of the fuel that's used in Florida being imported from out of state and much of it being imported from other parts of the world. This is a major issue. And, of course, energy efficiency also gets you to the lowest overall energy costs.

I would like to stop there, but I won't. I'll acknowledge that we've also got other values that are at stake here, and we need to address them for this all to work. And that is the utility profits and financial viability. We need a stable, reliable energy system. And, finally, we need fair rates. We need to look at competitiveness, and a lot of times people tend to focus on the short-term competitiveness issues, but there is also long-term economic competitiveness issues that we need to look at.

And I think that some of the slides we've seen earlier about how some states have got lower -- by far, lower

total energy costs than Florida now on a per capita or per business basis suggests that maybe some bad choices were made 10, 15, 20 years ago that are now affecting the economy of Florida. Maybe not as explicitly as the mortgage crisis, or the federal deficit, or things like that, but underneath it all it means that Florida is a less competitive place economically than it might have been if we had made different decisions 15 or 20 years ago.

And I think now, again, we are at a fork in the road. If we choose the high cost generation investments, that will then mean that we will need to fulfill the growth projections for energy use that those resources are justified with. If we don't, we will drive up rates. If we drive up rates unnecessarily to pay off overbuilding of assets, that's going to hurt economic competitiveness. So, instead, we can drive up use and keep rates down and fulfill those projections and that will mean we will be wasting energy use and will have engaged in unnecessary investments.

So I think this fork is real, and it's going to affect policy and determine how things play out over the next 10 or 15 years in sort of an inevitable fashion. And I'd like to say that you can make the decision with this issue alone, but the reality is, is this decision is going to be made incrementally across lots of complicated regulatory dockets and some of the decisions will be made out of state or at the

federal level, and what's it going to add up to? What direction is it going to add up to?

Wow. This is not showing up at all.

UNIDENTIFIED SPEAKER: It's the projector.

MR. WILSON: Okay. This projector does not like colors. I'm going to have to have you imagine some colors here. This is a good lesson for testing out presentations on lots of different views.

What I've got here is a graph that describes sort of the different views of cost-effectiveness. And what I want to start out with is a very simple level. First of all, let me explain sort of the axes here. The X axis is the cost of energy efficiency. And this is simplified into sort of the long-term costs per kilowatt hour delivered. So if you do a commercial lighting project, what is the lifetime cost of that in energy efficiency? And I've measured it relative here to rates. So at 1X, that is average rates. So if average rates are 9 cents, then that would be 9 cents.

On this axis we've got the avoided cost of electricity generation. And so, for instance, if the avoided cost for that commercial lighting project is more than rates, so let's say it's a very peak oriented project, then it might be up in here. And if the avoided cost is less than rates, then it would be down here.

And what we would basically say is from the utility's

perspective, if the cost of the project is less than the cost to do energy -- excuse me, than the cost to buy the energy, then you would expect that it would make economic sense to do the energy efficiency project. In that case we're talking about anything that's above this blue line. In this zone up here the cost to generate electricity is more than the cost to do energy efficiency. Down in this area the cost to do energy efficiency is more than the cost to generate the electricity. So energy efficiency is too expensive here. Over here generating power is too expensive. And that blue line is where it matches out equally.

Now, from the customer's point of view -- if the customer is going to spend the money on the energy efficiency, so let's just say I'm going to go out and buy a new heat pump for my house, and I figure out how much more it's going to cost me to do the energy efficiency. If the cost to me is less than rates, I think that's a good deal. If the cost to me is more than rates, I think that's a bad deal. So I'm going to be thinking about rates, and the utility is going to be thinking about its avoided costs. And these are different perspectives because of the different side of the Public Service Commission's decision that we end up on.

So this creates sort of four zones as I've illustrated here. This zone down here is wasteful. This zone up here is cost-effective from everybody's point of view. And

then we have these zones here where an energy efficiency project may be good from one person's point -- good from a customer's point of view to do, but not good from the utility's point of view, or vice versa. And so what this illustrates is that there is clearly no perfect universal definition of cost-effectiveness that addresses everybody's concerns from their own sort of place in the world.

Now, what I've done up here, and I have set aside the participant test, is illustrated the cost-effectiveness tests that are currently in use. And this involves a little bit of simplification, because, of course, when you're talking about the cost of energy, you're talking about both the capacity cost, the cost to have that power available, and the energy cost, the cost to generate it. So if I could develop a four-dimensional slide here, I could illustrate these tests perfectly. But since we only have a two-dimensional screen that doesn't even present colors accurately, I'll have to -- you'll have to accept that I've made some reasonable simplifications here. And I can't even think in four dimensions very well.

So, at any rate, here I've put the utility cost test as this blue line. And if you think of the cost of energy efficiency as being the cost for the utility to deliver it, that's true. And then the total resource cost test would also add in the participant costs, so it shifts the line up just a

little bit. You could also think of the cost of energy efficiency as the cost to the utility and the consumer together, in which case the blue line would be the total resource cost test. For the purposes of this discussion, those two cost tests in a way are kind of pretty similar, so I'm not going to spend a lot of time distinguishing between the two of them.

The rate impact measure test is up here, and that's because even for free energy efficiency, it's not equivalent to the total resource cost test. So there are many fewer programs that qualify under the rate impact measure test than under the total resource cost test. This is not news to anyone who is familiar with these tests. This is a very widely established point of view. But the reason I wanted to lay it out here is to sort of set up some discussion a little bit later on and explain how these interact with the financing mechanisms that are used by the utility commissions across the country to pay for energy efficiency.

So here is one approach that is used in many states. There is no state that announces that it uses this. It's the cost control incentive. Utilities can go out and spend their own money in most states if they don't care to request ratepayer recovery to pursue energy efficiency projects. And there are plenty of utilities out there that without explicit Commission authorization do demand response and even energy

efficiency programs. A lot of times they will call them for public relations purposes or whatever.

In most cases you're going to find that these programs are targeted at peak power, power that costs significantly more than rates to generate, and this is called the cost control incentive. By cutting their high cost energy generation needs, they save money and they profit more effectively. So there is a very -- again, a small number of programs here. And, of course, you will notice that this blind matches up pretty neatly with the RIM test. And, again, that's a simplification. They don't exactly match up because of some of the subtleties that I'm not able to display in two dimensions. But they are fairly closely matched.

Anywhere below that line, and if there is no Commission authorization for recovery of costs and incentives to do energy efficiency, the utility's earnings are harmed by pursuing energy efficiency programs, and that's because they generate less revenue than it costs them -- than they can recover in rates by selling the power.

Okay. So then let's look at the next approach, which is cost reimbursement. That should, in theory, solve all of our problems. If we just cover the costs of running the program for the utility, then they should do all cost-effective energy efficiency. Unfortunately, that's still not true. We do capture a lot more energy efficiency, but still utilities

are going to be unwilling to do anything -- or should be unwilling from a financial point of view and their stakeholders' point of view, shareholders' point of view, to do anything less than rates. So if rates are on average 8 cents a kilowatt hour, if the avoided costs are about 8 cents a kilowatt hour, then the utility is going to make money anytime that they are able to sell power for 8 cents that it costs them 6 cents to generate. And this is called the through-put incentive. There is an incentive to sell power when it costs less than their rates. And because of that, even cost reimbursement is not enough to incentivize a utility to pursue energy efficiency in that area. So it's for this reason that even a cost reimbursement scheme is not adequate to capture all cost-effective energy efficiency.

So, first of all, coming back to the question at hand is the cost effectiveness test. RIM programs don't capture all cost-effective energy efficiency. And, furthermore, it's also interesting to note that cost recovery for programs that pass the RIM test is actually, generally, an unnecessary financial incentive. So it presents you with this sort of dilemma of, you know, you've got this test in place that says here is the only stuff we'll pay for, and then you don't actually need to pay for it because the utilities generally already have a financial incentive to pursue those programs.

And, again, that's not an exact match. There are

some issues there that have to do with fuel costs and the fuel cost pass-through, and that sort of thing. But my point being that we've got a system in place right now in Florida that is not really ideally suited to pursuing cost-effective energy efficiency and doesn't even really achieve what you might think it is trying to achieve, at least not perfectly.

Another issue with the use of the RIM test as an essential test for energy efficiency is that it's really inequitable. It helps non-participants in the short run, because it increases system utilization, and it defers rate increases. But a lot of modeling exercises that I've seen suggest that in the long run the RIM test actually results in larger overall rate increases, and that's because the total cost to deliver energy when you're spending -- when you're investing in plants that cost 8 to 12 cents a kilowatt hour to generate electricity, and that costs more to the public in general than the energy efficiency at three to five cents, or, you know, two to three cents. And this is pretty widely understood.

So the upward rate pressure from investing in high-cost power plants is what is really at stake here, but it is true that in the very short term energy efficiency programs can create upward rate pressure. It's a very short-term effect, because it basically says that you've planned capacity to meet a higher level of demand than you are actually

achieving. And so we need to somehow make up that revenue requirement that was out there, and that produces an upward pressure on rates in the short run. But in the long run the problem is solved.

Another inequity of the RIM test is that some energy efficiency always happens anyway. There are people who are just altruistic. There are companies that are very savvy, et cetera, et cetera. And all of that energy efficiency that happens, state building codes, et cetera, helps the system avoid or defer fixed costs. And this is basically a situation where it is the non-participants who benefit essentially as free riders, people who fail to take advantage of the latest technologies that are out there. They are getting the benefits of avoided high cost investment in new power plants without participating in the effort to make the economy and the energy system as efficient as possible.

And so a lot of the focus on the RIM test has been on it's inequitable to impose costs on people who are non-participants, because it's sort of some kind of a cross-subsidy. But in reality I think in the long-term it's the other way around. It's the non-participants who are really the free riders on the investments of people who are helping to keep the total system cost down.

Now, let me get into the details of this. And for those who are not mathematically focused, I apologize in

advance. But I've put up here the equation from the California Standard Practice Manual for the RIM test, slightly simplified for presentation purposes. But we have on the top the benefits, which are the avoided costs of energy for the utility, and then on the bottom, the three components of the costs under the RIM test, which is the revenue loss to the utility of not getting revenues from selling electricity, the program administration costs of the energy efficiency program, and the payments to participants to incentivize their participation in the program.

This is illustrated here in an analysis from Georgia Power, a recent analysis that they did. And I want to point out the relevant magnitudes of these values. So, again, revenue loss, program administration costs, and participant incentive costs. And I apologize for the slightly strange letters, but those are the letters in the California Standard Practice Manual, so I thought I would use that. So here, notice that this column right here, this is the utility's avoided cost. And C1 here is actually the revenue loss to the utility.

And notice that those are the two numbers that dominate the equation. This particular comparison here is at 100 percent incentive level. So this is the utility paying 100 percent of the cost of the energy efficiency installation at customer sites. Down here at the low incentive level, this is

the utility paying 25 percent. And so you can see that at any level of incentive, all the way down to zero percent, it is not the program incentive piece which is right here, C2, and it's this dark one there, but it's the other -- it's the revenue loss and the benefits that drive the equation. Those are the two most important pieces of this equation. So even for free energy efficiency, it's not the cost to runs the program that really matters in the RIM test analysis.

So, again, coming back to this equation, I've taken that revenue loss factor here and I've broken it out into its component parts, which are rates times the demand change. And that's how you calculate revenue loss. And, again, there are some issues there in terms of energy costs and capacity costs that really matter.

Now, when you're talking about an energy efficiency program, these three components on the right, and you're going to have to memorize and imagine some colors here. These are the green -- this is a green background that you don't see here for EG, PRC, and INC. These are fairly certain. Now, I mean, certain is a relative term, but there is a lot of good engineering work that has be done on energy efficiency programs, and the costs and the demand change in those programs are based on all this experience. We've been doing these programs for decades across the country, and we can, furthermore, as we apply these programs, learn from their

results over the first couple of years and modify our findings and really hone in on those numbers pretty well. And these are projected out over the lifetime of the measure. So this is going to be a 20 to 30-year estimate.

In comparison -- oh, great, I get some color here -- the yellow sections here are numbers that are typically modeled statically in a RIM test evaluation. We assume that utility avoided costs are some forecasted future growth in fuel costs and generation plan, and we think, okay, that's pretty -- we pick sort of one scenario and model that. And on the bottom rates are also primarily the utility's expectation for how rates are going to work. And rates, again, are not just based on the cost, but they are also policy decisions of the Commission as to how rates will be structured. The balance between a fuel cost and a capacity cost and how those will be reflected on customers' bills.

So this calculation is not just simply an engineering calculation, it also reflects a view of the world over the next 30 years in terms of fuel costs, in terms of generation additions, what kind of generation additions we're going to make, how much they are going to cost. Those are driven by decisions in China and India that affect the cost of these generation additions. Transmission and distribution, what are the costs of that? How is that going to work? What are other states going to do? Are they going to become the exporters or

importers of power? All of these things affect these numbers in reality, and we pick one future and put it into this test in order to evaluate this thing over here, which is the energy efficiency measure.

In theory, if it's well-applied, and it often is by many utilities, you've got a very consistent approach to evaluating the utility avoided costs and the rates. You use the same assumptions. But when you apply in many states, and this is -- I'm thinking here of Georgia where we've got this situation very acutely, we've got avoided costs being forecasted out into the foreseeable future at five to seven cents, but they're considering building nuclear power plants in the state at 10 to 12 cents a kilowatt hour.

So you've got a mismatch there in the equation based on this assumption. You've got rates based on one thing and costs, the benefits side of the equation, based on another. So you are underestimating the benefits, overestimating the costs. So you think you're evaluating this over here, but what you're really evaluating, again, going back to that graph I showed you earlier in the presentation, is the difference between these two numbers.

So it's sort of -- to conclude this part of what I'm presenting, the RIM test can really overstate the upward pressure or, theoretically, the downward pressure on rates, because most of the factors that really drive this part of the

equation here are really outside of the structure that really affects the -- excuse me, are outside of the cause and effect relationship between energy efficiency and system costs. Avoided fuel costs, those are outside of the control of this measure, because those are not -- those are not part of the utility's earning stream. Avoided fixed costs are critical.

The only place where energy -- excuse me, these are actual savings to the system right here. This is the area where there is actually an upward pressure, usually, again, in the short term only on rates, is the reduced contribution to system fixed costs. And the rate of depreciation and the rate design, both of those factors, how quickly we depreciate the plans, how rates are designed effect how big a factor this one is compared to these other two. It's supposed to have some different coloring here between this one and these two to distinguish the fact that this is the piece of this part of the equation that really reflects the upward pressure on rates. All of the rest of this really reflects other factors that are driving the overall system dynamics. And a lot of key assumptions are made that get lost in the final analysis.

These limitations are often ignored. I put a quote in here. I'm not going to read it. You can't read it from there due to this color situation. But the California Standard Practice Manual discloses these problems, and yet they are often ignored.

The RIM test is useful. I do want to emphasize that there are uses for it. It is not a completely misguided tool. It's useful for comparing programs with highly variable scopes. So, for instance, a program that has a strong component on demand response versus one that has energy efficiency -- if you are doing sort of internal comparisons or one that has different financing tools in place, it's useful for that. It's very useful for studying fuel substitution issues, when you've got things like gas hot water heaters or electric hot water heaters. It is, finally, also very useful for program design evaluations, just seeing how the program worked in practice and understanding how it might be improved. So for those purposes, I think the RIM test is useful. But I do not think it's useful for any of the three purposes that I set up at the beginning of the presentation.

So, again, here is what I said earlier about what the purposes of the cost-effectiveness definition might be. And here is my recommendations on this:

First, the system level commitment to demand-side management, I think that you need to set a DSM plan target that is analyzed more on an integrated resource plan framework. The underlying concept here is similar to the total resource cost test, but it is a multi-dimensional analysis of all of the potential supply and demand-side resources modeled together out in the future to see what is the lowest total system cost which

will result in the lowest average rate in the future, and that will reduce the upward pressure on rates most effectively if you look at that over the long term. And when you're making decisions about power plants and DSM programs that have 20 to 30-year lifetimes, focusing on the next three to five years of rates is a mistake.

Second, in the area of program evaluation, I think the total resource cost test is appropriate. And as the staff mentioned, there is a provision for consideration of externalities. I think those can be considered in that if the Commission so decides, and we would support adding some of those externalities in. Particularly we would support using some kind of a cost of carbon adder into these evaluations to reflect the fact that we are likely to see that kind of regulation at the federal and state level in the near future.

And, finally, at the measure implementation level, I would argue for actually a more aggressive cost-effectiveness test. And what I have in mind here is sort of when the trucks roll, what do you do question. When the truck pulls up at the house or the business to deliver energy efficiency services, you should not be evaluating at that point the measures based on looking at the all-in costs of the program. You should be saying, now that I'm here, and now that I've made a decision to invest in Measures 1 through 5, if I on the spot discover that Measures 6, 7, and 8 look attractive, we didn't think they

were, the test should be, really, will the customers' total bill go down if we implement these programs? And then you need to sort of figure out what is the fair deal to strike between the utility or whoever the administrator of that program is and the customer in paying for that measure. But it really should be a customer rate test at that point, after the program has been designed, after the trucks have rolled.

And this is to avoid the problem of stranded opportunities. Because once you're on site and you've invested in getting the program delivery personnel on site and you're ready to go, that is a huge investment, and it's not one that's likely to be repeated for that same customer again for many years. And so sort of postponing other measures that might not have been included or might be not quite cost-effective in that initial decision, at the point that you're there you need to be even more aggressive. And I could talk in more detail about that at another time when we're talking about program design and implementation.

I would like to give credit in this. I've used a wide variety of sources, and I didn't want to provide all the citations for the work that we've done. At Southern Alliance we don't do our original resource. We very much stand on the shoulders of others. But I want to give special credit to a recent set of white papers from MSB Energy Associates that were presented to the Georgia DSM Working Group that our

organization participates in, and those were just released in the past few weeks. And I'm happy to share those with staff if that would be of interest.

Thank you very much.

MR. FUTRELL: Thank you, John.

Next up we have Mr. Chris James. Chris is with Synapse Energy Economics. He is appearing on behalf of Mr. Jerry Karmas with Environmental Defense has arranged his participation. And Chris is going to be joining us by telephone. We'll be operating his slides.

Chris, are you with us?

MR. JAMES: I am.

MR. FUTRELL: Okay. Go ahead, please. I'll be operating your slides. If you will just give us a notification when you want a slide to advance, we'll do that for you.

MR. JAMES: Great. And I really appreciate Chris Potts for helping me out this morning.

If I understand from John, do we have color for you all on the screen?

MR. FUTRELL: Yes. You're in good shape.

MR. JAMES: Okay. Great, because if we don't, some of my slides will be difficult to see.

I wanted to begin by just supporting John Wilson's points. The framework that he presented in terms of this issue is correct, and his statements on sort of the scope, the lost

opportunities, those type of things are very important to consider. And I will be highlighting those as I go through my presentation, but I first wanted to recognize John and his great work and also to indicate support for that.

The perspective that I'm going to be showing this morning is really from a national lens with a number of recent studies and facts that we have seen over the last six to 12 or 18 months. And I'm doing this to provide an overall context for you all that are considering this important issue. There are a number of important international and global factors that are affecting how we view all energy issues, and I think the opportunities that Florida has today to consider this issue going forward really can emphasize the degree to which demand-side management programs can help to sort of emphasize local control over what really is becoming a very tough issue to deal with on the global and international level.

So, Chris, if we could go to the second slide in terms of the overview of my presentation this morning to provide that context. We have seen the cost of new generation escalate substantially, and this is really happening across the country, regardless of whether we are talking about a coal, oil, natural gas, or a nuclear plant. We have seen significant increases in costs for both labor and materials. The factors that are driving these increases are not temporary. John alluded to what is occurring in China and India, and certainly

those factors are going to continue.

In the last year, in part because China has become a net coal importer, domestic U.S. coal suppliers have actually recognized that they can increase their profits by accessing international markets and, in fact, are doing so. Coal from the United States is now being shipped to other countries, and that is putting pressure on domestic fuel prices, as well.

In addition, just the general increase in raw labor and materials costs have risen dramatically since 2003. And, again, that is pretty much across the board, regardless of the materials that you're discussing.

If we could turn to the next slide, Chris. Again, John made this point eloquently. What we are really focusing here on is that consumers pay bills. Indeed, in the short term, rates may go up, but their bills will decrease. If I'm a business, and I install very efficient lighting and variable speed drives and motors and, you know, more efficient HVAC systems, I will see those benefits immediately. If incentives are used to help pay for those, those, indeed, may raise rates in the short term, but the benefits start immediately and are cumulative, depending on the life of the measure being looked at. And we generally use a period of eight to 14 years, depending upon the particular measure or the portfolio of measures being considered.

Go to the next slide. There is quite a bit of good

news, however, especially in the New England and Middle Atlantic regions. In the last two years, the independent system operator for New England completed an exercise that we refer to as the forward capacity market. And in that proceeding demand-side measures are valued the same as supply-side resources. And what we saw in the first auction that was completed just two months ago was that over 600 megawatts of demand-side resources cleared that auction, and we believe contributed to overall lower capacity prices that will be seen in New England. As more demand-side measures -- and I use demand-side measures also to include demand response, which we have a fairly aggressive program here. So as those continue to develop, we will expect for capacity prices to be reduced even further in subsequent auctions.

The second point is that in both average efficiency programs, as well as what we refer to as leading programs, those states that I've shown in the third bullet, for example, the costs of these programs and the savings are being achieved at less than half the cost of new generation. Leading states, such as Connecticut, Vermont, and California are achieving savings at one percent of sales, for example. Connecticut and Vermont are in a trajectory to achieve 2 percent of sales this year or next. And, actually, Vermont is even on a higher trajectory than that.

Several states have passed legislation that requires

all cost-effective efficiency to be obtained in those states. Those include five of the six New England states, basically all six New England states except for New Hampshire, California, and then we have seen recently in Maryland with the Empower Maryland Act that passed just two weeks ago, and then a recent action by New York to direct NYSERDA to develop a plan that in these states there really seeing starting as early as 2010 not only the ability to flatten load growth, but actually to decrease it in real terms. And that will produce significant savings in those jurisdictions.

The last bullet recognizes a provision that's included in Senate Bill 2191, which is also known as the Lieberman-Warner Bill. There is a provision that allows states that have adopted energy efficiency programs, decoupling, aggressive building codes, et cetera, to be eligible for extra greenhouse gas allowances in the first three years after that legislation passes and is enacted. And, obviously, those allowances do have monetary value that is an additional benefit to those states that have passed those programs.

If we could have the next slide, Chris. On the supply side, I just want to talk in a little more detail about the economic influences that we are seeing. In addition to the cost of new generation and the fuel, material, and labor cost increases that we are seeing, supply-side resources are exposed to a higher risk from greenhouse gas regulations, as well as to

future volatility from fuel price. Also, continued reliance on supply-side resources increases our risk to energy security, as well as, you know, exposing overall to climate change and global warming.

Okay. Go to the sixth slide, and I'll get into some details on the cost of new generation. Recent filings that we have seen reflect that new coal prices are coming in at 9 to 11 cents per kilowatt hour. A recent filing by Baltimore Gas and Electric is expecting even higher costs of 10 to 12 cents per kilowatt hour. We are seeing similar trends in oil and gas, and for nuclear we have seen even higher trends. Some of you may be aware of the FP&L announcement that expected nuclear costs to come in at what are predicted to be very high rates going forward.

These costs are increasing due to a variety of factors, not only due to global demand, but in many cases the labor rates themselves have increased. For example, in one filing that we reviewed in Oklahoma, the architect and engineering costs rose from about $220 per kilowatt hour to $350 per kilowatt hour just over an 18-month period. The reason for that is that a lot of firms that were affected by the last recession in 2000 and 2001 have not restaffed in part because of uncertainties of the market. And in so doing there is an incredible demand for their resources and they have had to raise rates in order to, you know, supply that demand. And

we don't expect that staffing to increase, especially with the current uncertainty that we are seeing.

At the bottom of Slide 6, this table comes from a recent report that Synapse released. It was a report that we prepared for the Grace Foundation called "Don't Get Burned, the Risk of Investing in New Coal Plants." And this is just an abstract of some of the materials price increases that we have seen, nickel, copper, cement, iron and steel, et cetera. The first column after the commodity where it shows average escalation from 1986 to 2003, basically reflects an increase that was approximately the same as that of inflation.

The next column is the average annual escalation that we have seen from December 2003 to April 2007. And then the final column on the right is the difference between the recent increase compared to the historic average. And you can see that it has just been a significant increase across the board for all those materials that are then reflected in the costs that we are seeing for new generating plants.

Go to Slide 6 -- excuse me, Slide 7. In addition to construction costs, the fuel prices are also driving rate increases at existing plants. We're seeing a number of requests for rate increases across the United States. This is just a sampling of several that have been filed recently, starting with the AEP filing in West Virgina at the end of February to raise rates by 17 percent due to an increase in

coal prices. Wisconsin Power and Light has filed for a fuel rate increase there. Southern California Edison, ditto, because of natural gas prices. And, finally, Center Point in Minnesota has filed a rate increase due to the increase in natural gas. This is just a sampling across the United States. There are many such others that you are probably aware of or have heard about, and this is something that we follow quite closely.

The next slide, Chris. Going forward in the future, we don't see this trend changing. EIA, which is fairly conservative in terms of their forecast typically is showing higher natural gas prices in the near future to continue, especially the increased demand from India as well as other countries. We expect to see that price pressure sustained.

Okay. Let's go to the next slide, Slide Number 9. So, what can we do on the demand-side to limit risk? And these measures that I had mentioned earlier are much more cost-effective than supply-side measures. The first point that I wanted to make is that energy efficiency and conservation are typically defined differently. Energy efficiency are the day in, day out measures that are working whether it's lighting, or motors, new building design, those type of things that are available, you know, 24/7.

Typically, the word conservation is applied during periods of peak demand when folks are asked to or businesses

are asked to shift load to a different period or to do something more aggressive than they would otherwise do. And I know the terms are used sometimes interchangeably, but in the states that we have worked in and in our previous proceedings we are familiar with, we try to distinguish those two. And energy efficiency being the preferred term to talk about the types of programs that are the subject of this workshop today.

To complete the three-legged stool on the demand-side, the demand response is very important for periods of peak demand, especially where we see loads being driven, for example, by winter electric heating or in summer by air-conditioning. Demand response programs can help with energy efficiency to reduce peak hourly prices during those periods that often coincide with extended periods of hot, humid weather or very cold weather.

There are a number of benefits in addition to energy benefits from demand response. Obviously, you're deferring the need to upgrade or install new transmission lines. There are benefits to reducing peak hourly prices. And for states that import power or import power during certain periods, demand-side measures can decrease the amount of imports needed, as well. And there are a number of environmental benefits. In addition to greenhouse gases, reductions in ozone precursors as well as fine particulate matter, both of which are significant air quality issues in many parts of the United States.

Okay. Let's go to Slide Number 10. In this slide, which I hope you all can see clearly, there are a lot of numbers there, but this is an evaluation of a commercial lighting program from Xcel Energy in Minnesota. Minnesota is one of a couple of states that uses all five of the California tests. And what's, I think, important here is that if you look at the rate impact test column, which is in the middle, these measures would have failed using RIM by about two mills, and would not have been implemented in Minnesota. This would have left a tremendous amount of savings on the table, as well as, obviously, not being able to reduce demand in that state.

And I think another point that I would make from this is on the participants' net costs where you see incremental capital and incremental O&M and rebates, the rebates represent the participants' costs, which include program administration. The rebates are about 20 percent of the total in this particular example. And obviously this is a commercial and industrial sector example.

In the residential sector, which is more decentralized, some incentives may be higher, though one of the trends that we have seen in that sector is rather than provide incentives directly to the consumer, the typical one being a reduction in like a compact fluorescent light bulb, a lot of programs are actually directing incentives upstream to the manufacturer so that the manufacturer is encouraged to produce,

say, more efficient appliances that would then be sold throughout their state. The net benefit to the consumer is the same, but the actual overall benefit from the company's perspective is much greater and has much more certainty. And that trend is being seen in a number of the leading states now.

Let's go to the next slide. Just to talk about RIM a little more. John has done a great job, I think, going through the equation and factors and things like that, but I wanted to provide a little more background based on our experience. The first point being that something that is free will fail the RIM test. If I'm giving away some more efficient measure or whatever it may be, and I run that through the RIM equation, it will result in a ratio of less than one. And that seems to be, at least from a conceptual basis, you know, a rather strange result.

Another point that I would make is that if RIM were applied to supply-side resources, only new plants that reduce rates would be constructed. And I think we would agree that that would result in very few new generating plants being built if the same tests were applied on the supply side as they were on the demand side. We would not build many plants at all.

The third point is that a number of non-participants who choose to participate will certainly save more in direct energy costs than they would if they chose not to participate. In the next two slides I want to show just some examples of

what are happening in several leading programs now across the country.

So if we could turn to Slide Number 12. These are summaries of programs from Vermont, California, Connecticut, and then Sacramento. And there are a lot of data on this slide, and I certainly will not go through this in detail, given time, as well as I'm sure you all want to eat lunch at some point. But the take-home messages here are that the row that has annual megawatt hours saved over megawatt sales, Vermont, California, and Connecticut are achieving approximately one percent of sales in this slide. And this is for the period 2004 to 2005. These have actually increased quite a bit since this slide was prepared. This was taken from the National Action Plan for Energy Efficiency Report that was prepared by EPA and the Department of Energy. Both Vermont and California, as I mentioned, are on a trajectory to achieve much higher rates than that.

Slide 13, which has the same four jurisdictions, talks about the cost of energy efficiency and the avoided cost in each of those jurisdictions. You see that the lifetime cost of energy efficiency is somewhere between one and three cents per kilowatt hour, and that the cost of energy efficiency as a percent of avoided energy cost in Vermont, California, and Connecticut is all less than 30 percent. And even in Sacramento, it's still only 63 percent of the avoided cost.

Okay. The next slide is a slide that one of my colleagues is putting together and it will be presented at the ACEEE conference in August. So you all are actually the first people to see this slide, because the paper is still in draft form, and this is a view that looks backwards. I know there is a lot of dots there. I'm assuming -- I'm hoping there is a lot of different colors that show up. But this is a view that looks backwards at all of the programs that you see listed there, Connecticut, Massachusetts, Seattle, Pacific Gas and Electric, et cetera. And we looked at what these companies and municipalities have been able to achieve as a percent of sales and what the costs are.

And as a result of that analysis, this graph, we think, shows some very, you know, illuminating things. The first being is that it appears to debunk one of the theories that many folks had, including many energy efficiency program managers, that the deeper the savings are that at some point your costs will increase. We have not seen that as yet, even at, you know, one to two percent savings as a percent of sales. If anything, it appears that the costs are flattening or perhaps even decreasing.

And, you know, I want to emphasize this is a backwards view, you know, looking at what has been achieved to date. It does not make any forecast about what might happen in the future. But it certainly is, we think, a very great

snapshot in terms of what has happened, and these are all current data.

One of the reasons we sort of drilled into why we were seeing these factors was that the assumption being that the deeper you went in efficiency that the farther up the supply curve you will be and, therefore, higher costs. The reason that we are not seeing that so far is that in many cases we're seeing technology advances over time to meet the challenge, to meet the certainty that is provided by these programs. And there have been a number of economies of scale that have been able to have been realized as a result of the programs that have been implemented in these jurisdictions. This may change in the future, especially in those states that, as I alluded to earlier, have passed all cost-effective efficiency programs. But even so, when the cost of new generation is 9 to 11 cents, we have quite a ways to go before we even come anywhere close to that, even at half of those rates.

All right. Let's go to Slide 15. I just want to sum up a little bit here before getting into my recommendations section. On oil and gas, we're seeing world oil demand and supply continue to escalate. All of the forecasts coming out of EIA and other governmental agencies expect oil to remain above $100 per barrel for the rest of this year. Gasoline prices are now at record levels and those are expected to

continue, as well as the uncertainty over those prices. Natural gas prices are expected to remain high, as well. And residential electricity prices are expected to grow as a result of the fuel increases that we have seen this year and in the past.

Slide Number 16. Going forward, I wanted to just try to capture some of these elements and put them in the recommendations. The rate impact measure test is one of five tests that can be used. Some states like Minnesota and Wisconsin use all five, and that can be a very good way to look at different programs. I think John made this point, especially when you are talking about programs that allow switching between gas and electric, it can be an effective measure for that.

The sole use of RIM, though, tends to have a snapshot view of what's occurring and misses the real opportunities to achieve cost-effective savings that accumulate over time and are less than half of that cost of the new generation. Energy efficiency load management and demand response are all part of a diverse portfolio and certainly should be considered in that context.

I would also mention that demand reductions benefit everyone, even those who don't participate or install the measures. Reduction in peak electricity demand reduces prices during those hours. Reduction in base also reduces prices and

also reduces the need for less efficient and more expensive resources to operate.

Slide 17. Additional benefits, including the T&D deferrals and that the way that the Lieberman-Warner Bill is currently constructed, states are eligible for extra allowances. Florida is not currently eligible for those allowances, but it could be if it were to impose or pass legislation requirements that are consistent with those that would satisfy the eligibility criteria for those provisions.

In terms of how this could be achieved -- the next slide, Chris -- Florida can, indeed, ramp up its existing demand savings over a five or so year period, the one percent of sales, and probably better than that. We think that's a fairly average type of increase that could be achieved. And I wanted to, you know, just emphasize that demand-side savings, we try to think of them as bonds, as part of a, you know, rational and diverse portfolio, reducing risk exposure to rate and bill increases and that the benefits accumulate over time.

My next slide has contact information as well as a phone number. I wanted to conclude with just a little more background based on experience. When a lot of the eastern states as well as western states restructured their electric markets in the late 1990s, there was considerable resistance to incentive type programs for energy efficiency as well as renewable energy development from business and industry

associations. But what we have seen -- and many of the members of the associations now sit on the boards of the efficiency programs. What we have seen is these associations are now some of the best supporters of these programs, because they've seen the benefits that their members can directly achieve. We've had customers here in the northeast, commercial and industrial customers, install measures and immediately see their bills decrease by 20 to $50,000 per year. That's a very effective message going forward, and it's one that is certainly nice to see from across the board, and not just from, you know, an advocate's position, but that business understands the benefits of efficiency as well as the long-term accumulated benefits, as well.

So I want to thank everyone for listening, and thank the staff for their work in patching me in as well as getting my presentation uploaded. And I understand there is time for questions now if I remember the format of this workshop.

Thank you very much.

MR. FUTRELL: Thank you, Chris. And we are going to just move on in our agenda to our next speaker. Thank you for participating.

And next we will have Mr. Gary Brinkworth with the City of Tallahassee to talk about their recent analysis of energy efficiency programs and the programs that they are offering.

Gary.

MR. BRINKWORTH: Well, I'm going to be doing sort of a little different presentation than what we've been seeing so far today. I'm going to talk a little bit about the actual experience we had here in the City of Tallahassee in terms of selecting cost-effective DSM as part of our recent integrated resource planning study, and talk a little bit about how we got from where we were on DSM portfolios to where we are now, and how we integrated that analysis into our IRP process.

As it says, we did develop those during the IRP study. We used kind of a unique analysis that doesn't really involve any of the five standard tests, but it mimics a couple of them, and we are going to talk about that as we kind of go along. It's an ambitious expansion of the city's current DSM portfolio. You can see some of the statistics I'm showing you at the bottom of this slide. A fairly significant reduction in demand and energy by the end of our planning period there, which was 2026 for the last study that we did. And, furthermore, it's going to ensure -- the current portfolio will ensure that we actually will need no new resources in our overall portfolio until after 2016.

So let me talk a little bit about how we got to this new portfolio. We started with a pretty traditional DSM kind of analysis based on RIM and the participant test used to select measures that we were going to include for consideration

in the IRP study. We looked at about 191 measures as part of our first step screening process.

Our avoided unit at that point was a gas-fired combined cycle unit. When we ran the traditional tests, nothing passed the RIM. Too attractive -- the avoided unit actually was kind of too attractive based on our current generation portfolio and, of course, we had the lost revenue issues that you've been hearing discussed this morning already. And so as a result, we didn't have anything that passed. We went back before our city commission and said, you know, that's not really going to give us anything in terms of a dynamic portfolio to choose from when we finally get to running our cases in the IRP. And so we asked for permission from our commission to use a slightly different method than we had historically used, and that was to come back and say, all right, what if we choose everything that passes the participant test and the TRC test, and it can score on RIM anything all the way down to .75, and maybe that will generate more results for us.

And so when we did that analysis, we found out that we had -- we went from nothing passed to 38 measures that passed, and you can see the statistics here. Most of those were commercial measures that actually passed that composite analysis, that would pass participant and TRC and then pass with a RIM score above .75. It still didn't give us quite the

bundles that we were looking for, and so the commission said go back and try again. So we backed up and put together a new team to help us out, including Navigant Consulting, and also some folks from Synapse, who we just heard a discussion from just a minute ago.

And we started kind of back at the beginning and said, all right, what we want to do is characterize, perhaps, a more complete list of measures. And, in fact, we ended up with a new set of 269 measures that we hadn't looked at before in addition to the ones that we had already looked at. And what we decided we wanted to do was take an approach that, first of all, looked at the DSM measure on a levelized basis against a comparable supply-side resource with an idea that what we would do is screen out those things that were actually more expensive than the supply-side alternative, carry only those ideas or measures that passed that busbar screening into the next step where we would go and build bundles. And so that was the next step.

As we looked at market potentials, we looked at implementation rates and penetration assumptions and built various bundles of measures, and then did a little of what Navigant calls a meta-analysis. We looked at a bunch of other studies that had been done around the country to see what level of system savings other people were seeing. So that as we were building up our bundles into a portfolio that we were not

getting a result that was inconsistent with what we were seeing around the country. So it was just kind of like a benchmark check.

And then we went and developed hourly load shapes for these bundles. So we put together measures that made sense into bundles that attacked either end uses or particular market segments and then created hourly load shapes that represented how that bundle behaves over time. And then we rolled all those up into a portfolio and used it as a modifier to the load forecast that's part of our integrated resource planning process.

So the measured data -- this is just a slide that kind of points out what we pulled together. Everybody kind of knows how to do this. A lot of the measured data came from places that had just done some pretty expensive -- I'm sorry, pretty extensive studies. This study of ours we did beginning in 2004 and it felt like it lasted 20 years. If you were here locally, you know, you sort of thought that. We thought it lasted 20 years. It didn't get an approval from our commission until December of 2006. So it was like a two-year analysis. A lot of these sources -- there are some new sources that came out during the course of that process. But these are kind of where we got the things with Navigant in the lead trying to help us put all this stuff together.

So let's talk a little bit about the busbar screening

step. This is really where we started our process. We took these measures that Navigant had pulled together for us, and we calculated the levelized cost of these measures over the life of the measure, and then compared it to a supply-side resource that has a comparable duty cycle and levelized the cost of that resource over the life of the measure. So that we are basically comparing apples and apples as close as we can on supply side and demand side. And then said what we would do is we would take all the measures that were cheaper than generation based on that definition.

So now this is a slide of just an example of one of several of the curves that we used in this particular process. And what you see, again, is my colors turned out sort of okay. We're still having some color opportunities (sic). But the three curves that are on this slide are peaking resources; LM6000A, the 7FA, and the 7EA combustion turbine, which run between -- and this is a 20 to 30 percent capacity factor chart. So you have peaking units on here. And then what you do is you plot the levelized cost of all of those DSM measures that have a similar duty cycle, a 20 to 30 percent capacity factor duty cycle. And what you see is virtually everything passes in terms of being cheaper than supply.

Now, there is just a couple of things that are more expensive, and we sort of labeled those so we would kind of know what they are. A couple of PV systems that are really

expensive, a particular CFL replacement program, and one of the assumption on Energy Star dishwashers. But pretty much everything else is below these curves. We found that kind of to be the case across the board when we looked at this, and so the screening step didn't really reject measures so much as it just confirmed what we thought going in, which was most of these conservation measures were going to be cost-effective or we should carry them forward into the analysis.

So even though those three or four dots show up above the curve, we actually carried those over and put them in bundles, as well. So we didn't actually use that screening step to reject anything, it was just kind of there to give us another sense of what was cost-effective, maybe, and how it fit together.

Now, in this slide the colors didn't come out at all, but this is pretty basic stuff anyway. Market-size analysis, of course, starts with the overall markets. You begin to cut that down through various stages of eliminating things like only the facilities and homes and businesses with a particular end use that you're targeting. You look for only the feasible solutions that you can do in those facilities. You try and get rid of your free riders, and then we also took only the willing customers, because we know there are some group of customers that won't do it regardless. So that gets us our market size.

And then on market penetration we assumed some fairly

aggressive things to get us good market penetration. One of those was pretty aggressive incentives. Now, the City of Tallahassee's programs up to this point were all loan-based programs. We didn't really give incentives. What we did was we loaned customers money at a fairly low rate and we collected that on their utility bill.

What we're doing now is talking about incentive-based programs, and so one of the things that we did was move in a direction of looking at some fairly aggressive incentives, because what we wanted was a two-year payback period, generally speaking, for most of our measure bundles. And so that meant we were going to have to give some fairly aggressive numbers, put some fairly big dollars on the table which our commission had to agree to approve in order to stimulate customer participation. And you see some of the examples on this slide of what we chose to do. And we used kind of guiding principles for payback acceptance based on -- particularly in the residential marketplace you can see two and three-year payback periods, kind of move your acceptance a little bit.

And that's really what this next slide is about. The curve on the left is a residential payback acceptance curve that shows what percentage of market penetration you achieve with what kind of payback. We capped our market assumptions at 80 percent of the willing customer market just as a conservative estimate. The curve on the right, of course, is a

penetration curve that assumes a fairly traditional kind of grow your market penetration over time, so you don't assume that you jump right out with a big -- with a big penetration in your market because you have to roll out your program, you have to get your customers to buy into it. So both of those characteristics were also included in the way that we built our bundles.

When we got the bundles in an area where they were beginning to look like that we could estimate an impact in the savings number, at least from a static test perspective, we then jumped over and look at this meta-analysis step. And said, okay, are we way out of line? Are we consistent with what other people are doing? Basically, the end result of that analysis was to tell us we were pretty well on target. Because on the average, at least of the studies, the current studies that we looked at at the time, people were projecting .7 to .9 percent of sales as an annual average savings number. Our analysis to that point of the bundles showed that we were going to have about that number, about .7 percent. So we felt pretty good about what we had come up with in terms of just the bundles and what their impact was going to be.

Load shape development. Again, at that point in time our best data was a data set from California. So we took hourly load shape data from that California data set for the bundles, now, not for the individual measures, because we had

rolled those measures up into bundles that attacked particular end uses or market segments. And then we mapped all of our measures into these bundles, rolled them up into one or more portfolios that I'm going to talk about in a minute, and then ran them through our IRP tool.

So our cost-effective test basically happened in the integrated resource planning runs, the 25-year present worth revenue requirements analysis where you're looking at various permutations and combinations of supply-side resources. We did apply the DSM portfolio as a load modifier. So what happened is we made the going-in assumption let's apply the portfolio and then let the software optimize around that portfolio to see what other supply-side resources it would choose given the assumption that that DSM portfolio was fully effective. Then we went back and tested other variations of the DSM portfolio and did that again.

So we assumed, like, what if you only get half of what you thought that portfolio was going to be? You go back and run the optimization again. We made some assumptions about some program impacts being frozen after a certain point in time. If you only had a certain amount of willing customer participation, what was going to happen there. So we did several iterations of this optimization, and then let our criteria, if you will, be the levelized present worth revenue requirement number that we would ordinarily use in any other

system planning analysis when it comes to the end of choosing a case out of the IRP study.

This is a slide -- these next two just kind of give you an idea about what is in our portfolio as a result of that analysis, and these are just kind of grouped. Again, you can see they are end use kind of things. These are not bundles that are particular measures. It should be no surprise, given our climate and everything, that about 42 percent of this summer peak reduction comes from space conditioning measures, that's changes in HVAC systems, controllable thermostats, insulation, all those things that have something to do with space cooling or space heating.

And the same thing is true here in the annual energy savings. Again, dominated by space conditioning, 47 percent of the portfolio is really in that end use. Both residential and commercial applications are in this portfolio, by the way.

Now, this is a curve that kind of shows you where we ended up in terms of our load forecast. This is our load forecast. The line at the top is the load forecast without any DSM on it at all. This green line right here is if we only do the residential part of the portfolio, and then the blue line is if we do the residential and the commercial portfolio. And you can see actually that what ends up in this portfolio, because of the way it's designed, that we basically have flat demand growth. It actually dips down a little bit here in the

2016, 2017, 2018 number.

When we get out here to 2026, that peak demand right there is about eight megawatts below what our peak last year was. So we've essentially created a portfolio that's going to flatten our load over a 20-year period, presuming that all of our customers, of course, step up to the table. And those of you that are our customers, we're expecting you to jump on board, okay, and be part of this success story.

This is one of the several charts that I used with the city commission to show that this was a smart idea without getting into all of the pain and grief and agony of what those cases are at the bottom of this chart. These bars show the present worth revenue requirements over the 20-year planning study window for four different assumptions that relate to the DSM portfolio. One is that we don't have a DSM portfolio. That's what the base is. That's these blue bars. The red bars are the portfolio, the way it was designed for 100 percent achievement of what's called achievable potential, which recognizes these willing customers and all that kind of stuff.

This bar that you can't see, it's actually a different color, this one is no new participation after 2016. So we said what happens if regardless of what we do, we can't get anybody until after 2016, but we continue to spend money to promote the program, we just don't get anymore folks. And then the last bar over here is what if we only get half of what we

had projected originally. So this is like a 50 percent scenario. So we would promote the program, but we only get half of the participation.

What you see is that without exception, the plans that include some version of this DSM portfolio are clearly less expensive on a present worth revenue requirements basis than the plan that had only the very minimal DSM that's part of our embedded programs right now. And some of these variations, for those of you that may be system planner geeks like me in the audience, know these numbers are on a 20-year PWR basis. Those differences are huge in planning cases, because we're talking about a long period of time with a lot of growth in costs and load.

So there wasn't any question in our commission's mind that we ought to do this. And so even before the whole planning study was done, they had already directed us to do all this DSM anyway, and then we would work out the optimized supply scenario after that.

So this slide is in here just to kind of acknowledge there is some good and bad things about this method that we applied. We think the good things include -- we did a cost-effectiveness screening up front. We kind of looked at this supply versus demand kind of thing on a busbar basis. Again, like I said, we didn't reject anything, but we think it was a good step for us. We think that approaching this DSM

planning process in bundles the way we did, rolling them up into a portfolio, makes more sense because we focused on the end uses or market segments, which is really the way that you end up rolling out these programs anyway. You don't really roll them out as individual measures so much as you are trying to tack in uses. So we like the fact that we rolled them up. We like the fact that it is a dynamic analysis, because it allowed us to recognize what happens to system dispatch and how that changes and how costs change over time as opposed to taking a snapshot or a static analysis like many of those California tests do.

And, lastly, it was really understandable from our policymakers' perspective. It was easier for us to come in and talk about this portfolio and the bundles and how it changed our overall plan, than to get down into arguing and talking to them about what a benefit/cost ratio was and what the difference between RIM and TRC is. So we like the way that we were able to present the information.

Now, on the maybe minus side -- and, of course, I think that first bullet is probably true of just about any method that we use these days for DSM cost-effectiveness. When you have a supply-side alternative that is really low cost and very available to you as a utility, it's very hard for the DSM measure to beat that option, particularly when you're looking at this on a present worth revenue requirements basis over the

life of a long-range IRP study.

And the other one is maybe it requires a little bit more effort. Clearly, it was a team effort from our perspective and took a long time to wade through all the measures to build up the load curves, to put things together in bundles, and then to run those scenarios through the IRP. So it's a little bit more process oriented, but we think that it is applicable to other folks.

Now, will other utilities get the same kind of results we did? Probably not, because our circumstances are pretty unique in terms of our current generation fleet and our fuel mix. But we think the approach offers some interesting opportunities to incorporate the dynamic nature of what you would ordinarily do in IRP modeling anyway, with a cleaner way maybe to select DSM options.

So, that's it.

MR. FUTRELL: Thank you, Gary.

Next we've got Mr. David Barclay. David is with the Gainesville Regional Utilities. He's got a few comments on their approach to DSM.

David.

MR. BARCLAY: Thank you and good afternoon.

I'm going to go with a little bit different of a presentation, kind of like Gary did. And I think it kind of matches up, kind of the next step after the work that

Tallahassee has been doing.

Just a little background. Gainesville Regional Utilities, this is who we are. Our peak capacity, 481 last summer, and our total installed capacity is 611.

And these are our DSM commitments as they stand right now. And you can basically see that we have an incremental demand commitment of 48 megawatts through 2017, and 128,000 megawatt hours through 2017. This translates to approximately a 60 percent decrease in demand and growth for our utility and a 22 percent decrease in energy growth for our utility through 2017.

And I just put one graph in my slide presentation that kind of shows you how we're diverging from the historical trend of -- the other line is not showing up, but there is another line that continues along this trend, which was our forecast without DSM, and then you can see that there is a dip that comes through. You can see the line a little bit there, I guess.

And what led us down this path was, basically, we went through an IRP process, and at the end of the IRP process our city commission gave us some direction. And Gainesville City Commission's direction is up on the screen. And some of the important parts I kind of want to highlight are: They wanted us to use the total resource cost test to pursue all cost-effective and feasible demand-side measures. And just as

important for us was that we needed to ensure that the needs of low income customers are addressed in those programs and not ignored. Because the city commission knew going into this that there is going to be some rate impact through the horizon for our utility, and they wanted to make sure that those customers were specifically addressed. And later in the presentation I have a couple of programs that we are doing for those.

So this is the process that we went through. The public discussion process started around 2002 with our IRP process. And after the course of having about 50 or 60 public meetings and meeting with the city commission several times, we identified that we did need a new economical baseload capacity in Gainesville and that we also wanted to pursue some demand-side management. And the city commission hired a consulting firm, ICF Consulting, to go through and look at our various options as supply-side resources and demand-side resources were concerned.

At the end of that independent review, they gave us the direction on the previous slide, and staff went out and visited energy efficiency leaders throughout the U.S., which I've listed here, Austin Energy, Burlington, Vermont -- Burlington Electric in Vermont, Long Island Power Authority, Sacramento Municipal Utility District, and Pacific Gas and Electric. A couple of the utilities that have already been mentioned today. We went to those utilities to speak with them

and find out how did they implement their measures, what kind of costs were they looking at, what measures did they think we could look forward to and how they came up with those.

These were the programs that resulted after those trips and out of our integrated resource plan. I'm going to talk in a little more detail on the ones that are bolded.

And like Gary mentioned in his presentation, none of this is really possible without a commitment from the community. Because at the end of the day what we are doing is we're asking our customers in Gainesville to participate in the set of programs that we offer. Even if you cover 100 percent of the expense, you still have to have someone who says, I'm willing, you know, come over here, do a retrofit in my house, put PV panels on my house, change out my HVAC system. And in most cases, you're not paying 100 percent. It's not a free ride for those customers. So they have to be able to participate and willing to put up their own money.

And as you can see, the results that we have had so far has resulted in Gainesville Regional Utilities' customers spending $7.5 million over about the last year and three months. Now, that 7.5 million resulted in 17,541 megawatt hours of savings, which is about a four to five-year payback for our typical customer in Gainesville's service area. And so if you think back to the participation curve, the payback acceptance curve that Gary was showing, that kind of puts us on

a flat part of the curve. So we offered incentives of about $3 million, which brought the payback for those customers to about two and half years, which really moved us up that participation curve and got us some more participants.

And just kind of some on-the-ground experience, there are programs -- lighting retrofits for commericial customers has been huge for use. And you will go into a customer -- and we were going to customers two years ago, three years ago and saying you've got to change out these T-12s. You can put in some T-8s. And the customer said, yeah, yeah, I know, I know. And they would have -- we could show them papers that said they had a two-year payback, a one-year payback, even, and they wouldn't do anything. But when you walk in with our custom business rebate, and you say, we'll pay for 50 percent of the savings -- I mean, 50 percent of the costs up to $40,000, now they are suddenly interested in talking about a good investment, even though the investment is only marginally better than it was in the first place. But what I think happens is that they see that the utility is now not just saying, oh, you'll save energy; they're saying, we'll pay you to save energy. We believe in it so much that it's going to help us and you that we'll actually put up some of our own money for that.

These are some of the stand-out programs that we've had so far. The custom business rebate is probably the biggest

one for us definitely, because it counts for 40 percent of our savings in our first year. The other thing with it is that it doesn't work under RIM. And when we were using the rate impact measure test, this kind of program wouldn't have panned out because the energy savings from this program are enormous. And so then you come into the question of do you have a disincentive to offer the program. And we definitely did under RIM, because the lost revenues were overcoming any benefit we had from it.

The way this program works is we have some spreadsheets and some calculations, we look at a customer's building, and we get an engineering analysis of what the energy savings will be, and then we calculate what incentive GRU can offer for that. The majority of these to date have been lighting retrofits, because it's got a quick, easy payback for the customer. We have some contractors in the area who are willing to do the work. But we have also done some things like some motor controls and some energy management systems which have larger peak impacts.

The low income energy efficiency program, or the LIEEP program, is one of those programs that we've implemented to help the low-income customers that will be affected by rate increases over now and in the next few years. And this program has gone past weatherization. And, basically, the way the program works is GRU writes a voucher for up to $3,000 to any

local contractor who is on our preferred contractor list. And that contractor can then go meet with individual customers and work out with them what the best improvements are for their home. A GRU energy auditor then comes out and makes sure that those are improvements that, indeed, need to done in the home, and then up to $3,000 of work on average is done in those homes. And the program has been hugely successful, and we've been able to get some discounted prices for these customers, too.

We've been able to do complete HVAC replacements, instantaneous gas water heater replacements, and full house insulation, along with a couple of other projects when we worked with the general government side of our city who was doing rehabs on homes anyway, where they put in new efficient roofs and things of that nature, which we couldn't afford through our program, but kind of leveraging things together, it has happened. So that's been a very successful program. We've done 100 homes through that so far, and we're planning on doubling that, hopefully, in our next budget.

And solar photovoltaic has been another standout program for us. Fortunately for us this year the state was offering an incentive through the Florida Energy Office, and GRU was offering an incentive on top of that of $1.50 a watt. So over the period of January to February, 2007 to 2008, 193 kilowatts was installed in Gainesville Regional Utilities'

service area. And that works out to about 17 percent of the total that was installed through the state's program between July 2006 and February 2008.

Gainesville Regional Utilities' service area represents one percent of the state's population. So we took that as a real strong commitment from our community that we had a good incentive, and that they were interested in installing solar.

And then one more program that has definitely been impacted by a switch to TRC is a refrigerator recycling program. Refrigerator recycling saves an enormous amount of energy. We're basically removing that second refrigerator, which probably some of you today have in your garage or on your porch, which is holding some kind of frosty beverage, and that's about it. Well, when someone replaces a refrigerator, it's often easy to just say, well, let me put the other one out in the garage. Well, we come in and we offer an incentive. Let's take that out. We'll take it from you. It's going to save you instantly, because there is no cost to it. It's a huge energy saver, but it is big on lost revenue, so it wouldn't normally work under a rate impact scenario.

In the phase that we're in right now, because we've been running our programs for a little over a year, is the continuous review phase, because these programs cost a good deal of money. We have, you know, a budget of over $3 million

in our budget for these programs. We need to make sure that our investment is really purchasing what we're after.

So in addition to just keeping up with all the programs and making sure they all succeed, trying to remove any barriers that occur along the way, we also have to do measurement and verification, which I think is a key part of any DSM portfolio. And measurement and verification is basically -- and since I have the fox in the henhouse up here, we'll just say you don't count your chickens before they're hatched. So measurement is counting the eggs. Verification is coming back in a year and counting the actual chickens. So we count how many HVAC replacements we have, but then we have to go back and look at the data, the billing data, the revenue data, and say are our customers actually seeing energy reductions in the field. And that's the phase of the program we're on right now.

We started our measurement and verification this week with KEMA Consulting, and I'm hoping that we will have some really good results to show in about six months. And our approach so far has been to have early review. We work with our peer utilities, and specifically last May we had Roger Duncan from Austin Energy come out and review our programs to see if we were on the right track. Austin Energy is typically considered one of the energy efficiency leaders in the nation. We thought it would be great to have them come out, take a look

at our programs and see if we are doing the right kind of things, if we are running our programs correctly. And they did that, and it was of no cost to us, so it was perfect. Moving on with the third party, M&V with KEMA, and then we are going to adjust our programs as necessary over time.

So, in conclusion, I think that the total resource cost test was the right decision for Gainesville. It came out of a long process for us, and it was the decision the city commission wanted to move forward with. It was the decision our community wanted. And our goals are only going to be able to be achieved with a continued community effort. It's not going to happen if it's just the utility. It's really got to be all the stakeholders have to be brought in. And like I said before, I think M&V and continuous review is a key part of any DSM program.

Thank you.

MR. FUTRELL: Thank you, David.

Our next speaker is Mr. John McWhirter.

MR. McWHIRTER: Mark, Mr. Lilly and I are going to take about 20 minutes. Would you rather do it before lunch, or after lunch, or during lunch?

MR. FUTRELL: We'll go ahead and try to do it now. You guys go ahead and get started. We'll fly right through.

MR. McWHIRTER: It's difficult, because it's hard to listen when you have a hungry stomach, and it's hard to listen

when you're sleepy right after you've eaten, but I'll try to energize you the best I can. It occurs to me that on Harry Truman's desk there was a sign that said "The Buck Stops Here." And it's really happening again. We had an energy problem in the late 1970s when the Florida Energy Efficiency Act was passed because costs were high, interest rates were high, people were excited about it, and that's when you started on your energy efficiency programs that Judy has told you about earlier.

Governor Bush, when the energy got high again, appointed the 2020 Commission to determine where we're going to be in 2020, and that commission came back with proposed legislation that resulted in an energy act. And then there was another energy act in 2007, which Governor Crist vetoed because it didn't do enough. Then he did his executive orders mandating certain levels of RPS and so forth. And today on the special order of the calendar of the House you have House Bill 7135, which is the Consensus Energy Bill. And the Legislature isn't going to make the decision. They're sending the buck back to you, Mark.

So, who is FIPUG? I was intrigued by the last two presentations. In their ten-year site plan, Tallahassee has 749 megawatts of installed capacity. Gainesville has 632 megawatts of installed capacity. FIPUG is composed of industrial people. They are not always the same. They

participate year in and year out determining -- based upon what's impacting them at the time. But their total consumption of energy approximates the total output of Gulf Power. Their total installed cogeneration capacity approximates, or is a little bit more than Gainesville, and a little bit more than Tallahassee. So they are big consumers.

You've heard -- the first five presentations were made by people who are environmental philosophers and economists. The last two were by utilities, and now you are going to hear from a customer. Just before lunch when you're hungry or -- but I'll go into that later.

In any event, what is FIPUG interested in? And it seemed to me that what you're interested in is set out in the five questions that you asked. And so I went back to the legislation that was passed in 1981 or '80, the Florida Energy Efficiency Act, and I underlined certain things, and I numbered certain things. And it looked to me that the energy act, which is still incorporated in the act that's in the special order today in the House, is they want to increase the development of cogeneration; two, increase conservation of expensive resources such as petroleum fuels; three, reduce and control the growth rates of electric consumption; and, four, reduce the growth rates of weather-sensitive demand.

Your first question, then, was what is each cost-effectiveness test designed to achieve? Well, I presume

that the cost-effectiveness tests, first of all, are designed to follow the legislative mandate as to what you're trying to do with your goals. But then it occurs to me that different people have different concepts of what they would like to see the goals achieve. And as has been pointed out by every participant so far today, utilities necessarily must be concerned about their lost revenue. We want stable, reliable, viable utilities, but you can't do things that will take away their revenue to the degree that it imperils their existence. And the people that I represent strongly support reliable electrical energy, and we strongly support them making a viable, but not excessive, income.

So where are we? Environmentalists focus -- well, utilities focus on Item 4. Item 4, as you recall, is controlling peak demand. And we'll get into that a minute later. That preserves revenue, because it doesn't reduce energy consumption, and energy consumption is where utilities make their money.

Environmentalists focus on Items 2 and 3, which is reducing consumption. And they recognize that it is important to protect the utilities' revenue, so they come up with programs, one of which is called decoupling, which enables the utilities to preserve their revenue while their customers are consuming less electricity. That is very similar to the programs that were used in the depression to protect farmers.

They paid farmers not to produce goods, because competitive competition was driving down the price and bankrupting the farmers. So with decoupling, the utilities will get the same amount of revenue, but they don't have to produce as much electricity.

FIPUG, what do we do? Well, when they have waste heat or when they can use fuel more efficiently, FIPUG members and other large businesses go into cogeneration. And that's why their cogeneration has grown to the level that it has today. And Mr. Lilly is going to tell you about what his company has done and what it has done to save energy. They do that because they can do it -- there's a ceiling on what they will have to pay on their electric bill before they will generate electricity. When the price gets too high, they either leave the state -- Stauffer Chemical Company is a good example. It was a large customer of Progress Energy. It moved its -- they used elemental phosphate to make toothpaste and soap. They moved their operation to Wisconsin where the power prices were less than Florida and shipped phosphate to Wisconsin, because it was cheaper to operate there.

Plants have been closed in Florida. Production has been moved to other states in response to high electric bills. But there are great opportunities for energy efficiency within industry. So industry diligently tries to achieve 2 and 4, because -- they don't want to consume electricity because they

want to save money, and in order to stay in business they have to operate within their budgets and show a profit. Large businesses would use other devices, as Mr. Lilly will tell you, to achieve energy conservation if there were some incentive to do it.

Recently filed ten-year site plans show something that I thought would be of interest. This hasn't been mentioned by other people. It may be inaccurate, and I welcome anybody that thinks what I'm going to produce in this next slide is inaccurate, to look at it and correct it, and let me know and let the Commission know if what I've said is inaccurate. I am not a mathematician. I'm not an economist. I just look at numbers and sometimes make mistakes.

But here is what I saw adding up the installed capacity of the state's largest utilities and looking at what they forecast as their demand. Now, this is the ten largest. It doesn't get down to GRU, but it covers all the IOUs. And what that shows is what has happened in the past. And the growth rate from 1991 to 2006 was an average growth rate of close to four percent. They project that the average growth for the next ten years is going to be a little more than two percent. And maybe that's because of conservation, I don't know.

But what we do see is that in 2007, the ten biggest utilities didn't install enough capacity to meet the demand of

all the customers at the time of their summer peak. They don't have enough capacity to meet the demand of all the customers at the time of summer peak, and they won't have enough capacity until the year 2016, when Progress Energy brings into play its next nuclear plant. And here's a graph of that. The red column shows what the demand at the time of summer peak is, and the installed capacity is the blue column.

Now, how do they meet this capacity shortfall? The capacity shortfall is met by buying power from Georgia, but the problem is we only have transmission capacity to bring in 3,400 megawatts from Georgia. So you need to build more transmission up in North Florida, especially along the west coast. And, as you see, inadequate. And then purchases from one another.

What happens is they use the benefit of fuel diversity. Florida is a long state, and as a consequence it is cool and raining in some parts of the state and warm in others. And they can buy -- through the good Florida transmission grid, they can buy from one another to meet these demands. The other thing they do is load management, Item Number 4, which utilities concentrate on. And what they do is they cut off the demand of interruptible customers, load management commercial customers, and residential customers with air-conditioning and heaters, they cut them off in peak periods in order to provide service for the other people. There's one problem with that, however, and that is they've signed up over a million

residential customers, that's why when I showed you the other graph, it didn't correspond exactly with what the utilities tell you, because they tell you what their reserve margin is. And the reserve margin doesn't count these million customers that can be cut off. And so they can cut them off if they need to and if they can't buy from someone else. And the problem with that from the residential perspective is that those people can terminate their agreements within 30 days. So if it gets too hot or too cold, and a lot of people get excited, they can say I don't want to do this anymore. I want to become a firm customer again. And so you're going to have a serious capacity problem.

The fourth item is conservation and energy efficiency. That also shows in the ten-year site plans utilities rely on conservation and energy efficiency. And in the opinion of everyone that has spoken here today so far, energy efficiency is the low-hanging fruit, the greatest opportunity in the near term to meet this capacity shortfall that I've suggested to you.

Are the methods capturing all the benefits? FIPUG says no, and the reason is because of the RIM test. Everybody has talked about the RIM test today. And the problem with the RIM test is, I believe, and this is just my opinion, but I believe it was based on the California manual. The RIM test was adopted in California at a time when most utility revenue

came through base rates. And if that was the case, there would be a rate increase if base rates fell off. And, of course, as you know, we had rate cases by every one of the four investor-owned utilities every year from 1973 through 1979.

But in the latter part of the '70s they came up with a unique concept, and that unique concept was cost-recovery clauses. Today, 70 percent of the utility revenue for investor-owned utilities comes through cost-recovery clauses, not base rates. Base rates are undisturbed by most expensive -- especially the expensive fuel expense. But what is the problem with that?

I show you here. The RIM test -- and this is very simplified. The RIM test has many other components, such as avoided plant, but the RIM test here focuses only on what happens with fuel. Well, if you save a million kilowatt hours, you will result as a benefit of fuel cost savings, based upon this utility which charges 4-1/2 cents, now they mostly charge more than that, but it would save $45,000 in fuel cost.

But the problem with the RIM test is they also count that as a cost, because the utility doesn't get that $45,000 in revenue anymore. Ha! And they also lose their base energy charge and they lose -- they won't lose their demand charge, because demand will probably stay the same. But under the RIM test, you can see the deficit from that million kilowatt hour reduction is 63,000. The savings were only 45,000. What

happens? It flunks the RIM test. So programs that save fuel, that conform to Items Number 2 and 3 in the statute, which is still in the statute, will fail the RIM test. So your question was what's not working? That's what's not working.

Gainesville and Tallahassee have abandoned the RIM test, and they use a total resource test. They acknowledge that you can't look at the rates. But we've still got to protect the utilities, okay. How do these methods impact the level of conservation goals? They kill them.

This gives you a description of what the RIM test is, you were shown that earlier today. And the rate impacts, the last one on the bottom, is revenue loss, but that revenue loss is not just the revenue that the utility uses to make its profit and cover its fixed costs. It's the revenue that's replaced by fuel cost. You know, if you don't burn the fuel, you don't have the cost, so you shouldn't count that revenue.

Whether other methods should be -- the method should be modified. I won't go into all that, except as pointed out earlier, the costs are going up. For Florida Power and Light in its ten-year site plan it says when it puts in this gas plant, it's going to cost $565 per kW. For the uprate it's going to cost $4,431 per kW. So it's going to cost a lot more money.

A national comparison of residential rates sorted by size. And I would certainly welcome anybody to tell the rest

of the story if this is inaccurate. What I did was -- utilities file a form with the Department of Energy, the Energy Information Agency every year and say what their residential sales are, what the residential revenue is, and the number of residential customers. It doesn't say what I've shown in this next two exhibits, because they don't go that far. But you can download it as a spreadsheet, and you can determine what the average consumption of the customers are, and what the customers pay on their monthly bill.

And look a here, what I've done is taken the largest 99 utilities in the United States, using the Department of Energy figures, and find out how Florida customers' bills, not the rate they pay per kilowatt hour, but their bills compare to the other utilities. And lo and behold, our customers don't buy just 1,000 kilowatt hours a month on average, even though we've got a lot of vacant condos, and so forth, the customers buy 1,264 kilowatt hours a month from Tampa Electric, and their bill is $138.63.

Now, I don't know if this is before the 14 percent tax, local tax, add-on or after. I suspect that it's after. I also suspect that the revenue that is going to be generated by the building of nuclear plants may offset some of the concerns of local government because the utility taxes are going to go up quite substantially to the local government when you have that 14 percent overlay. Of course, on small business it's 26

percent overlay.

Now, the problem as I see it is what can customers afford to do more? What can we afford to do more? And to wind up, one of the concerns is that you shouldn't look at costs alone. You should look at societal cost and other externalities. We fought this battle back in the early '80s. And at that point in time, my group said it didn't look like the total resource test was all that good, because people could come up with marvelous ideas of how many fish were going to be killed as a result of the coal sulfur-dioxide going into the atmosphere and then into the water, and they could artificially change the numbers.

That still exists. Now, the problem is that the legislation that's going to be enacted for the energy, what it does is it says you shall look at non-economic costs. I would suggest to you that while you're doing it, you do it very carefully and get the non-economic costs that are easily quantifiable.

And now I will surrender the podium to Mr. Lilly.

MR. LILLY: Thank you, John. First of all, let me say that my ten minutes will not take as long as Mr. McWhirter's ten minutes took. I'll get you through this just as fast and as painlessly as I possibly can.

My name is Henry Lilly. I've been managing a large power account for CF Industries for 22 years now, and I've

learned a few things about energy management. And I would like to share some of that with you here this morning.

First of all, let me tell you a bit about CF Industries. We are a large industrial company. We manufacture fertilizer at our Plant City Complex. I'm chief engineer at the Hardee Phosphate Complex, responsible for energy management, among other things. We also have our Tampa facility that is on TECO Energy, as is our Plant City Complex and our Bartow Complex.

At the Hardee Phosphate Complex, we are solely powered by Progress Energy, and our total facilities consume approximately 581,000 megawatt hours of electricity annually. Hardee will purchase 318,000 megawatt hours from Progress Energy Florida in 2008, with repeating maximum demands, that is monthly demands of around 57-1/2 megawatts; 17.7 percent of our operating costs are for purchased electrical power, and that's second only to employee wages. CF employs about 1,000 well-paid industrial workers at our complexes in Central Florida.

We produce approximately 3.6 million tons of phosphate rock at the Hardee mine and 2 million tons per year of dry granulated fertilizer products at Plant City. CF cogenerates approximately 260,000 megawatt hours annually at our Plant City Complex from waste heat that comes from sulfuric acid production. We export two megawatts to TECO.

We're in the phases of strategic planning that will have us to increase fertilizer production by another 10 percent by 2009. And we are also considering an additional fertilizer production increase of yet another 10 percent, and that brings us to a bit of a dilemma, which we'll talk about in a couple of minutes.

Our facilities operate 24/7; 81 percent of CF's electrical demand is during Progress Energy's off-peak periods. We run a pure off-peak schedule when lower production requirements allow, and that reduces our on-peak demand to below five percent. And from the 57 megawatts I showed you a while ago, that's less than 3 megawatts when we are capable of doing that. We're an interruptible customer, and when the peak demand gets too high, the utility just disconnects us. We avoid on-peak consumption at every opportunity.

We build and maintain over 20 miles of power lines at no expense to the utility. That's distribution class power lines on our own property. Our project's personnel consider energy efficiency in every evaluation. And let me assure you CF Industries is an energy-efficient customer. When we found that we could use the waste heat to produce electricity, the savings justified constructing internal electric generation. The reduction in our electric bill will cover the capital cost of generation within a reasonable time, and the cost savings provided sufficient incentive to make the energy investment

that we made when we started cogeneration.

TECO's average 2008 fuel cost is projected to be $53.59 per megawatt hour. CF cogeneration reduces TECO's fuel cost by nearly 14 million annually, but it doesn't qualify as a cost-effective conservation program according to our utility. For the 12,000 megawatt hours we sell to TECO each year, CF has paid less than TECO's average fuel cost, and we have received absolutely nothing for the capacity that we have in place.

A good program that fails under current evaluation. This is a program that was a part of my -- we had a million and half ton per year plant in Hardee County. We increased our capacity to 3-1/2 million tons per year. And so faced with the challenge of building such a large facility, we took 15,000 premium efficiency motors from the existing facility, took them south, added another 50,000 horsepower to that group of motors and built our new complex, which I call Hickory, which is the Hardee County relocation and expansion project. I will call the original plant Hardee 1 and the new plant Hardee 2 during the presentation.

We purchased all of that horsepower for our new facility, and those were premium efficiency motors. A modest incentive from FPC at that time encouraged CF to make an energy efficiency investment that electrical bill savings alone would not justify. Large motors are very expensive. Premium efficiency motors cost even 20 percent more.

Unlike cogeneration, the savings on our power bill didn't justify the cost. FPC reimbursed $6 a horsepower, while our company paid around $134 per horsepower. When we purchased another 3,000 horsepower in premium efficiency motors in '98, we were told that partnering with industry to be more energy efficient when buying large motors was no longer considered cost-effective.

CF's original decision reduced demand by .85 megawatts, annual consumption by 5,100 megawatt hours, and the savings to Progress Energy Florida will be $225,000 this year based on that original decision.

A recommendation for regulatory philosophy. Our utilities are conflicted in their programs to reduce demand and usage because it lowers sales. Now that we have a mandate to make Florida greener, we need to seize the opportunity to implement and maintain programs that have major impact on our future carbon footprint. The FPSC must play a major role in designing and implementing energy conservation programs.

Utility managers have many responsibilities. Their primary responsibility to their families and holding companies and lenders for increased profits conflicts with their obligations to their captive customers and the environment. The regulators -- you regulators can even the playing field by devising means to protect customers in the environment without depriving utilities of their operating costs and a fair return

on the investment.

This is an outlay of a typical phosphate mine. We start in a mine area with a dragline and a very large pump line. That represents about 12,000 horsepower. That dragline can represent 3,500 horsepower, 5,000 horsepower, something in that range. Half of the power is consumed here in the plant itself. We bring matrix, which is a composite material. We dig it out of the ground. It's made up of clay and sand and phosphate rock.

Every living cell in the world has phosphorous. It will die without phosphorous. Every living cell in our bodies have phosphorous. We know of no way to synthetically make phosphorous, so we must have this material to grow food to sustain our lives. So, nonetheless, that's what we are doing. We're taking this -- pardon me. We're taking the matrix from the draglines. We're taking it through the plant. We're stripping out phosphate rock in the washer, in the sizer, and in the flotation. Then that rock goes to the loadout. From there it goes into rail cars and off to Plant City.

In the meantime, the clay is put into a large lake, a man-made lake. That clay consolidates to a very thick material. We pump it with dredges. We now have three dredges on site -- I've got a big thumb, I guess -- and then that thickened clay is brought up. It looks like toothpaste coming out the end of the line. We mix that with sand. We put that

back into the cuts where the draglines have originally been, and we reclaim the land with that. That's the overview.

And we have implemented energy efficiency programs. We have implemented programs that are positive for the environment in every one of these aspects of our operations. Now, let me just go through those very quickly. In 1987, we were given a mandate to cut our power use to implement an energy efficiency program. And we realized -- we realized reductions of 39.1 percent in the kWh per matrix ton mile in those big pump lines. That is huge. And 10.2 percent kWh per matrix ton that we process in our plant, and our overall reduction of kWh per matrix ton was 33.2 percent. That's enormous. And there are so many industrial plants around Florida, industrial facilities that can do this, just like we did at CF.

CF implemented another energy conservation program at our 3-1/2 million ton per -- in April of '06, and overall plant reduction is about 13 percent, and the potential is at least 23 percent. Although both programs have been highly successful, potential exists for further reductions in kilowatt demand and kWh usage. The same magnitude of reductions exists in all of our homes and offices, schools, industrial plants throughout Florida. And I'm just asking that you would please send signals via our utility bills to reinforce the benefits of reducing demand and usage that will make Florida greener.

This is a chart of what we've done in the plant at Hardee. The dark blue line is made up of a composite of all the dark blue diamonds. It represents a time period from September 1995 through June of 2004. That's the dark blue line. And month by month we plotted these points of data. Some months we were horrible. Some months we did very well. Then in July of '04 we expanded our operations. One of our pump lines went from four miles out to six miles, and we became less efficient. And you see what happened here. If you look at the pink squares represented by the pink line, you can see a dramatic increase in kWh per ton that was processed in our beneficiation plant. A tremendous increase.

And the boss looks at me, and he says, Henry, what are we going to do about this? So we got a group together, and our energy conservation program that was started in April of 2006 and is going on today, represented by the yellow line, was able to -- and the triangles, if you will, was able to move us from -- let's take a point right here in the middle of the chart of 8-1/2 kWh per ton, brought us down to somewhere in this vicinity, less than 7-1/2, a 13 percent improvement.

One month I actually operated at 23 percent improvement, and I will guarantee you we can operate there given enough time and enough effort devoted to programs such as this. The potential savings are there in industrial plants all over the state. But when I see the presentations like I've

seen here today, I hear a lot about what is being done for residentials, and I hear a lot about the commercial energy efficiency programs. But I'm here to tell you I've got, I think, the best energy efficiency program in the state of Florida. And I'm really not being encouraged to do this. But I'm glad I work for a company that's willing to do the right thing, but there are a lot of companies out there who aren't.

So other things we've done, in 2007 we started to install 12 miles of pipeline. Now, I can stay with status quo, a 20-inch pipeline, add a lot more pumps, burn a lot more fuel, use a lot more electricity, or I could take a risk. I could buy a bigger pipeline that had lower frictional losses and not buy anymore. So I spent my money on a pipeline instead of spending it on motors that would consume power and fuel right on.

Now, it takes some guts, especially when the pumping experts say I think you're walking on thin ice here. But, again, we need signals sent to us that make us do the right thing for the environment to use the bigger pipeline, even though some people say it's going to plug. And that's a scary thing when you think a six-mile pipeline might plug. But you have the opportunity to send signals to industrials to re-examine all their engineering and to do the right thing to make Florida greener and reduce our carbon footprint.

I'm aware of 13 2,000 horsepower variable frequency

drives -- I'm getting ready to maybe buy another one -- that represent 26,000 horsepower in the state of Florida. When I asked my utility what type of an incentive do you have, because I'm doing the right thing for the environment. I'm putting in something that's more expensive, but more energy efficient. Nothing there, I'm told.

The benefits of cogeneration and energy efficiency. No environmental emissions, no consumption of fossil fuel resources, no construction of inefficient generators to serve the peak load.

We're currently increasing sulfuric production at Plant City. We're evaluating opportunities to generate additional clean power. We're considering the shutdown of some older sulfuric production facilities that are less suitable to power generation. Considering the retrofit of heat recovery technology into existing new sulfuric plants with a potential of an incremental increase in that export power of 10 megawatts to 37 megawatts. At the same time down at the mine I'm asking corporate for money to add another 9500 horsepower that will grow to 17,000 horsepower, and maybe 20,000 horsepower.

I started out at my new mine with a 38 megawatt demand. I'm up to around 57. I predict we'll peak around 70. Now, this is such an ironic situation in that I have waste heat at Plant City, and I would love to have it at the mine, but the way the structure is it's not cost-effective for us to build

all that additional generating capacity and give the power away at Plant City. So the way the scenarios sit now, we can't afford the additional production -- electrical cogeneration in Plant City, but we will continue purchasing that power from Progress Energy. TECO will burn more power, more fuel. Progress Energy will burn more fuel under the present scenario, and I find that very ironic.

Problem. Current cogeneration power values do not reflect fair market values.

Solutions. Net billing and wheeling.

Let me thank you for allowing me to come and make this presentation. And I hope you understand that CF Industries tries to do the right thing for the environment, and all I'm asking is that you send us some signals that say keep on keeping on, and other people out there who aren't doing the right thing.

Thank you.

MR. FUTRELL: Thank you.

We'll take a lunch now. We'll come back at 1:45 and get started with the discussion period. Thank you very much.

(Lunch recess.)

MR. FUTRELL: -- we are going to kind of try to follow that format. We've asked some of our staff to participate with us and go through some questions to try to engage the dialogue. And, again, this is going to be an open

forum. We want to encourage as many folks that wish to come up and participate.

And, again, the first area that Judy set up for us was in the areas -- really what are the tests designed to achieve? What's the purpose of the tests?

And we want to start off with Karen, one of our staff members, Karen Webb. Start off with one of our first questions in support of that issue.

MS. WEBB: I know some of the speakers this morning spoke to this, but our overarching question was what is the goal of utility-sponsored conservation?

MR. FUTRELL: Anybody?

MS. WEBB: I believe, Mark -- if I may, some of the items that were thrown out during the formal presentations, maybe that will help get things started here -- I believe it was Mr. Wilson with the Southern Reliance for Clean Energy who spoke to enhancing security, energy security, reducing the pollution associated with global warming and reduction of costs. Perhaps that is a starting point for discussion.

UNIDENTIFIED SPEAKER: Well, I agree with him.

MS. CLARK: I'm Susan Clark. I'm here on behalf for the IOUs: Florida Power and Light, Progress Energy, Gulf Power and Tampa Electric Company.

I don't have anything really to say, Karen, with respect to that. I think those are inputs to the

cost-effectiveness test that they seem to be advocating. And I guess I would be curious as to how are they planning to quantify those so that, you know, you can measure them in a cost-effectiveness test.

If I can just sort of make a statement about the goals and what I think should be the overall theme as you do set goals and think about energy conservation. I'm not sure -- I appreciate the fact that we've learned things today about different people's views on what should be part of an analysis when you look at energy efficiency. But I do think that the better forum to actually make some decisions on the tests you use and, frankly, what are the inputs into your tests will be part of the goals-setting process. And when I listened to some of these comments today, they seemed to be suggesting that a potential study needs to be done. And as I understand it, staff and the IOUs have already embarked on determining the parameters of a potential study. So that was done in the mid-'90s, and I think it's time to do it again, and staff is doing that, and I think that is a good thing.

So I really think when you move to the actual goals-setting and going through the process after you've looked at the potential and then request the utilities to do those cost-effectiveness tests. And as I recall, in the '90s they were asked to do tests that included RIM and TRC, and then it gave the information needed to make some decisions on what

goals should be established.

I see the debate sort of focusing on what are the inputs that should go into the test, and then what's fair to all the customers. And I think those are things that you decide as you move forward in setting the goals. But there are things we think that are appropriate to include. And I think staff is well-aware of them. Demand and energy reduction, the impact on rates, emissions, too.

I think we've heard some statements that energy efficiency will reduce emissions. Well, there are some scenarios under which that may not be true. And I've seen that presentation, I think, made to the Florida Energy Commission. So I agree it's something that needs to be looked at, but I don't think you can make the assumption that by implementing you will always reduce emissions. It depends on what it does to your dispatch.

You need to look at the cost of it, the cumulative present value of revenue requirements. Fuel usage needs to be looked at, as well. And then you do need to look at the impacts on the stakeholders.

And, finally, there are some programs, as have been mentioned, that are taking place that are going to have an impact, such as the cap and trade. The Legislature is looking at that, and I think if there is implementation of the cap and trade, you will, in effect, have a cost that has to be

incorporated into your analysis of a supply side. And that will flow through to make programs that might not have been energy efficient -- I mean, cost-effective without them, and it brings that sort of monetizing what is perceived to be an impact into the analysis. So that's just an overall view and theme we would like to make sure the staff keeps in mind.

MR. FUTRELL: Any follow-up? Any other comments on that?

MR. KRASOWSKI: Yes, Mark.

MR. FUTRELL: Mr. Krasowski.

MR. KRASOWSKI: Bob Krasowski. I'm with the Florida Alliance for a Clean Environment. I'm a customer ratepayer coming from sort of a grassroots perspective on this. And it's always been kind of confusing to me as what is each cost-effective test designed to achieve in relation to what I perceive as being a value of the tests that we now use. We use three of them. When I first entered an effort to understand how things work here in Florida, I heard so much about the RIM test, but I know that's it the other -- TDC (sic) and the other tests also. But the RIM seems to trump those. And I think for the purpose of my comments at this moment, what was demonstrated with the Tallahassee Utilities and what they've accomplished through other methods of analysis, of cost-effectiveness, of demand-side management, is certainly better than what the state is doing is my impression, you know,

from what I've seen and heard. And I've made an effort to understand all this.

I participated in various proposed projects from coal to nuclear in front of the -- as part of the discussion in front of the PSC. And I just don't see how these existing tests serve the public. And so I see the Tallahassee utility being effective in serving the interests of their customers, who they are. They are self-owned from what I understand. Whereas the utility I'm a customer of, and the utilities, the IOUs, the cost-effectiveness tests don't really seem to work, and it's because they don't address every aspect. They don't have a broad range of analysis.

I've been here before where the utilities have opposed spending a fraction of a penny to perform solar thermal projects, but they're willing to spend $5 a month or $9 a month for customers to pay for nuclear power plants. And there's a lot of gray area in between there. So, if, in fact, what people have said earlier today, and I don't know where all the environmentalists went, the ones that presented today. I don't see them sitting out here, just for the record. So if anybody reads this, they know there is a lot of people missing.

So I just -- I'm trying to understand why this is. Is the PSC not representing the interests of the people, but they are representing the interests of the utility? And what makes me question that is in the RIM standard the loss of

revenue is factored in there. Who else enjoys a protection against their loss of revenue in industry? I mean, if IBM enjoyed that, the new clones never would have happened. But I don't want to digress or get off the point too much. But I think -- I guess it's really unclear to me what -- I think I understand what these cost-effective tests are designed to achieve, but I don't think they are doing the public very much good. And my comparison -- my reason for saying that is what is done in Tallahassee. And if anybody wants to defend the PSC as opposed to what Tallahassee does, I would really be interested in understanding what they are saying.

Thank you.

MR. FUTRELL: Well, since you have raised that, I would like to get folks' opinions, especially if the IOUs are willing to chime in on what your initial impression is of what Gary and his folks at the City of Tallahassee did in their analysis. Is that something we need to think about? What's your thoughts on what Tallahassee has done in their analysis?

MR. ROWE: Hi, this is Dennis Rowe (phonetic) with FPL. We've talked with Gary in the past about his analysis. We've also spent a little bit of time talking to Navigant who did some of the work. And I think, you know, we are a little concerned why nothing they looked at passed RIM. And I think it's really a function of, you know, how fast you are growing, what your reserve margins are, potentially what your avoided

unit might be, those types of things.

I think we found, you know, most of the IOUs in Florida have a fairly broad portfolio of measures that, in fact, do pass RIM. So as Gary alluded at the end of his presentation, I don't know of it's something unique in their situation where they couldn't find any measures that passed RIM, but, you know, we found where the growth and -- you know, in our integrated resource planning process, we, in fact, find things that pass cost-effectiveness. And, you know, we think we've been pretty successful in doing that.

MS. HARLOW: Dennis, this is Judy Harlow with staff. I wanted to ask you specifically, and I know we are not really in the methodology portion right now, but Mark raised the issue of Tallahassee. What did you think of running the measures as a bundle through the IRP process, similar to looking at another supply-side alternative?

MR. ROWE: I'm sorry, Judy, someone was coughing, I didn't hear you.

MS. HARLOW: What did you think about the specific part of Tallahassee's methodology of running the DSM measures as a bundle through the IRP process, similar to how the utility would look at a supply-side alternative?

MR. ROWE: In fact, we do something very similar to that. We don't do it as a bundled set of measures, but once we've done the initial screening using cost-effectiveness, we

actually take portfolios of measures, bundle them together and run them just like they were supply-side options as part of our IRP process. So, you know, that's kind of the back-end check to make sure that although it passes the cost-effectiveness, it's still -- we run it against the total system, and that, in fact, it still remains cost-effective. So we do do that.

MS. HARLOW: This is Judy Harlow again. If I could get back on the philosophy of the DSM test, it seems to me, and I don't want to speak for Tallahassee, but having worked here for a long time on conservation, I know that the Commission and staff looks at conservation from the point of view of rates not rising higher than they would have otherwise been. And my impression of Tallahassee's reasoning or philosophy is the same. It's the methodology that's different. So I know we are going to get into the details later of the specific methodologies and whether they actually accomplish that philosophy, but I wanted to ask Gary if he's in the room, if he agrees that Tallahassee's philosophy is to hold rates at a level that is not higher than they would have otherwise been.

MR. BRINKWORTH: We always like to raise rates. That's what utilities like to do. I think you've characterized that right. I think what the city commission's viewpoint was, especially as we looked at DSM, was that they were clearly willing to allow for some rate increase flexibility. And you saw that when we went to them and they said we can be flexible

on our RIM score criteria. And when we got them to agree to that the first time, we said there's a potential here that there will be some upward rate pressure. But we wanted to do that in order to diversify our portfolio, because, obviously, again, our particular situation, as you know, is basically solely a gas-fired utility. So we are looking at ways to mitigate our portfolio risk a little bit on the resource side. DSM plays a really important part in that along with renewables for us.

So I think the Commission looked at the long-term potential for rate increases that might have otherwise occurred had we not committed to DSM, and allowed us to at least see some short term, maybe, upward rate pressure. I mean, we talked about that this morning, that in the near term possibly rates could creep up, and then they go down in the long term. I didn't show any of those graphics in my presentation today, but clearly some of the work that we did with our own commission in those workshops clearly showed that costs will go up in the near term with that aggressive DSM portfolio just because you're spreading the same fixed costs over fewer kilowatt hours. There is no place for it to go but up. But over the long term it's clearly going to be lower.

So I think what you said is right, we're obviously in the mode of wanting to hold our rates, but we understand that over time there can be some variation where maybe you have some

higher rates in the near term than you might otherwise have seen so that your rates are more stable longer term. And I think the commission -- our commission was willing to kind of trade that off, near-term impacts versus long-term benefits.

MS. HARLOW: And I know you mentioned this earlier, but just for the record, that fuel diversity benefits is especially important to your utility, is that correct?

MR. BRINKWORTH: It's critical for us, yes.

MR. McWHIRTER: Judy, one thing I think you have to recognize in your analysis is the difference in the capital structure of a municipal utility from an investor-owned utility. A municipal utility has no investors. It's 100 percent debt, and debt doesn't bear income tax, the interest on it. So normally the interest is lower. When you compare that to a utility that has 60 percent equity, in order to get an after tax return of 11.75 percent, which is the midpoint presently allowed, they have to charge on the equity component something close to 18 or 19 percent, plus a depreciation rate on top of that. So you've got a very significant difference in the needs of IOUs.

Also, IOUs being investor-owned, have to show current earnings that are good to keep their investors happy; whereas, a municipal utility can take that long-term view. And they can also, because they have bonded indebtedness and they have a renewal and replacement fund that must be set aside, a lot of

times that fund can be utilized to ameliorate the immediate impact on rates based upon what's going to happen in the future.

MR. TRAPP: Mark, may I have a follow-up on one of your questions with Florida Power and Light?

Hi. I'm Bob Trapp with staff.

MR. ROWE: Yes, sir.

MR. TRAPP: You mentioned that you do a back end system analysis that is more like the Tallahassee approach to check to see whether or not the measures that you've put together remain cost-effective when you look at them from a system-wide basis. And the question I had was, do you do that before or after the RIM test?

MR. ROWE: It would be after. We use the initial screen using the cost-effectiveness tests, and then after we actually develop the potential, so how much of each one are we going to do based on them being found cost-effective, then those get bundled and that's what gets integrated as part of our integrated resource planning process.

MR. TRAPP: I would observe that the RIM test tends to result in more emphasis, I guess, on peak demand reduction as opposed to energy savings. If you were to put the TRC test measures through that same type of analysis, have you done that, first of all, and do you think that would show that the additional energy savings associated with the TRC test might

move some types of plants in the future such as that you have long-term lower revenue requirements?

MR. ROWE: I mean, it's a potential. You know, we haven't done that analysis in years, but it very well could. It would be something that we would have to do, I think. Getting back to our initial comments that as we go through this process of setting goals, you know, those are the things we ought to be looking at in coming up with, here is the two portfolios, potential RIM portfolio. Our TRC portfolio, based on our current assumptions, our current data, our current analysis, side by side, these are the impacts.

MR. TRAPP: So to the extent that we enter into the goal-making process, and we identify basically what we're calling the unconstrained inventory that is not affected by economics, it would be prudent to run not only the tests that you normally run, but to run them through some type of system analysis as well before we do the cuts in the different cost-effectiveness tests?

MR. ROWE: That would be absolutely something we would consider, sure.

MR. TRAPP: All right. Let me end with one observation. Also, one of the things that bothers me about the RIM test as it stands is it assumes instantaneous rate relief. I'm not sure that's an accurate measure of upward rate pressure, since we have such a time difference between actual

rate cases, and there are a number of other financial and economic factors that come into play in a company's determination as to whether or not they are going to need rate relief. So it seems to me that some of this additional analysis would be warranted to try to better get a handle on the actual short-term and long-term rate impacts. And that's just an observation; you don't have to respond if you don't want to.

MR. ROWE: No. I think you are absolutely right. I mean, one of the things that we would propose is, as part of setting goals and developing potential portfolios to address goals is to look at things like rate impacts and when they might actually happen. I think that's absolutely the correct thing to do.

MR. TRAPP: I can't help myself. One last question. The incentives, though, that you pay to participating customers, those are passed directly through the conservation cost recovery clause, are they not?

MR. ROWE: That's correct.

MR. TRAPP: They do have an immediate effect on rates.

MR. ROWE: Yes, they do.

MR. TRAPP: One should probably consider that. Thank you.

MR. ROWE: Okay.

MR. PRICE: Yes, Mark. Again, my name is Snuller Price. I was asked to be here, not as an advocate -- thank you for the mike -- not as an advocate, but just to provide some technical support. And I think with this last exchange, I think it's really important to distinguish -- and this gets to the goal of energy efficiency programs -- between what you're measuring with the different cost tests. I think the RIM test, if we're looking at revenue requirement and whether the revenue requirement would generally go up or down with efficiency, the RIM test isn't telling us that. There is a different test for that, it's called the utility cost test. And we've been, I think, a little loose in our language between impact on rates and impact on bills. And you get a very different result. It sounds like a subtle thing, but it's quite different.

It's true that you can have an impact on rates and rates may increase, but that overall in a service territory the revenue requirement is lower and the customers' bills are lower. So it seems like if we get back to this goal on energy efficiency, and the goal is for a non-participating customer. So somebody who is not doing any energy efficiency not to increase their bill at all, then you would use the RIM test. But if your goal is to run an efficiency program that gets the overall bills of all of the customers in a service territory lower, then you should replace the RIM test with the utility cost test. And the rates/bills dynamic is tricky language,

because it sounds pretty similar, impact on rates, impact on bills, but, in fact, it gives you a very different portfolio of energy efficiency programs.

MR. FUTRELL: Did you have a comment, sir?

MR. SIBLEY: Yes.

MR. FUTRELL: Please identify yourself.

MR. SIBLEY: My name is John Sibley.

(Inaudible.)

MR. SIBLEY: All right. Thank you. My name is John Sibley. I am program director for the Southeast Energy Efficiency Alliance. We cover 11 states, including Florida. We are based in Georgia, and that's my home state, and so what I speak of is mainly from Georgia experience with little or no Florida experience. But there were a couple of observations I wanted to make related to the conversation that were sort of between the Tallahassee way as compared to the FPL way.

And one observation, based on the Georgia experience, is that if you run the RIM test first and then take out and get down to things that pass the RIM test and then do your bundling, you tend to leave out a lot of things that would make perfectly good sense if you started with bundles and thought about what would fit together as a bundle. And take just the example of a residential audit. In Georgia, I'm aware of a process that started with 500 measures through the sorting and down through RIM it gets down to well under 20 percent of those

measures before any bundling starts.

And as an example, in the residential audit area, something that fell out of the process early on was simply tuning up the air-con system of the home, which happens to be a very useful thing to do and can save a lot of energy, but it didn't make it through the screens very well initially. If you start with bundles and thinking about what might fit together as bundles before you start screening things down, you tend to add those things in, or as I think John Wilson was saying, when you're out there on the ground making that decision, do I tune up this air conditioner or not, you don't run the RIM test on that. You're out there working on the house, and it makes nothing but sense to tune up the air conditioner. But if you run it through the screening process, it runs RIM first and takes everything out until you only bundle the things that are left that passed those tests, you never get the right bundles together. So that's one reason I think the sort of system approach helps in the beginning.

The other thing is that the thought was made, I guess, that you didn't bring the charts that show the sort of long-range rate impacts. But those can be done, and they do tend to show some greater increase in rate over the -- you know, if it's a 20-year planning horizon, you will show over the first part of that planning horizon that there is an increase in rates, but it will show over the back end of that

planning horizon a decrease in rates. So that when you take the RIM test as sort of that thing which tells you about impact on rates or upward pressure on rates, you're totally losing sight of something that's easy to graph, which is that over a planning horizon of 20 years, if you chart the impact on rates from the beginning to the end of things that will not pass the RIM test, you, nonetheless, will see that over the long haul the impact on rates is fairly level. And, in fact, in the later years the impact on rates is down, not up. Is that not a fair statement?

MR. FUTRELL: Okay. Any other comments on our first topic?

MR. WILSON: Yeah, sure. John Wilson. Since it was teed up with my point, and I saw a skeptical look on some of the -- or some skeptical responses on including externalities in the sort of definition of cost effectiveness, I wanted to kind of elaborate on that.

I would probably depart from a lot of my colleagues and environmental and energy advocacy groups in advocating a relatively narrow set of things that ought to be considered in a cost-effectiveness evaluation that are outside of the sort of strict economic criteria that are applied in Florida. I tend to think that if you gum up the analysis with too many sort of squishy things, it ends up looking like our tax code. And there's lots of noble intent in our tax code, but I think --

and I'm speaking of the federal tax code, not the Florida one, which I'm sure is very thoughtful and sensible. But, you know, you tend to wonder if it really all works. Each individual incentive makes a lot of sense on its own, but doesn't.

I think the kind of things that ought to really be strongly looked at in a cost-effectiveness test that go beyond the strict what is the cost to deliver the electricity, what is the cost to save it, would be the things that could transform into economic costs in the foreseeable future. And I think the most salient example of that is the cost of carbon, which is currently being looked at at the federal and the state level. And I think it would be confusing and maybe even inappropriate for the utilities to come forward and throw in their opinions, each individual one as to what the cost of carbon is and try to sort all that out.

I think this is really a policy decision for the Commission to make. I mean, it represents a view of the future that is about the public interest, and it might want to consider adopting a limited number of very specific and tangible things that it wants to have looked at in the evaluation of the integrated resource plans and the DSM plans by the utilities. And I think that it should prioritize those things which could translate into an economic cost. And so if we are making investment decisions today, there may be financial implications for those that we can't predict exactly,

because we don't know what the rules are going to be. But the reality is that we don't know what the rules are going to be about a lot of things. We don't know what fuel costs are going to be, and so forth. And so I think a thoughtfully developed, forward looking, and clear Commission policy on that matter would be very helpful and would give good guidance to the utilities.

And then as those costs either become tangible in the sense that if laws are passed and carbon taxes, for example, are in place, or a carbon cap and trade policy is in place, then you would just -- you take out that sort of intangible cost, because now it's built into the actual financial costs. Or if it turns out that we move away from those policies, then the Commission can adjust its decision.

The same thing goes with energy costs. We probably underestimated the rate at which energy costs would be rising if you look back five or ten years ago. Well, we're making adjustments now.

Thank you.

MR. FUTRELL: John, I want to ask you a follow-up on that. You know, utilities typically perform sensitivity studies on varying scenarios, and high fuel costs, high load growth, things like that, low load growth. Along those lines of what you're saying, would you think it would be a sensible thing to perform some sort of sensitivity using the DSM

cost-effectiveness tests with varying levels or some level of carbon costs included, just to get a sense of what -- if those costs were deemed to be some likelihood of occurring in the near future, to get a sense of what the impact would be on potential savings.

MR. WILSON: Three thoughts on that. First, is that I think that that sort of analysis would be essential input into any Commission decision on this matter. I think you need -- you know, and that's going to be a very high level analysis. You don't want to ask our friends at FPL to go out and do a complete system plan under 14 different scenarios and submit it, and then maybe the Commission will decide something. So I think we're talking about high level analysis to give you a sense of what will matter and what won't. What's at stake? How big are the stakes?

My second comment in response to that is I actually talked to folks at Minnesota -- whatever the name of the commission is there, I guess it's a utility commission -- about a planning process that's somewhat similar to that. It sounds pretty exhausting. I know you all probably work, you know, short days, especially when there is rate cases and integrated resource plans to work on because those are really easy to do. And the idea of adding a lot of sensitivity analyses in a detailed way to that could be pretty exhausting.

That said, I think if the Commission said, you know,

there are two or three things we want to balance here as opposed to a single perspective on the world, and we want you to submit some fairly well-defined answers to our questions, and then we will select among them when we see what the implications are. We'll strike that balance. I think that makes sense. I mean, it's a widely understood principle of utility ratemaking that it's a balancing act between competing interests, none of which can be satisfied perfectly.

And so in that sense, I think a set of well-defined sensitivity analysis informs a balancing test, because you need to know -- you know, when you've got the teeter totter how far out on that teeter totter are the different things and how much do they weigh? And so you probably need a bit of information in that way. But I think it could be overdone to the point where it's just burdensome to everyone involved.

And speaking from an organization with far less resources to delve into that than a lot of the others in these issues, we're actually for a relatively simple, clear process, but yet we want everything taken into consideration. So, again, we have to strike a balance in our perspective in order to be reasonable.

Thanks.

UNIDENTIFIED SPEAKER: Mark, can I --

MR. FUTRELL: Go ahead.

UNIDENTIFIED SPEAKER: If I could, just one

observation I think might be helpful and sort of along that point with how California treats carbon and the externality issue. California, obviously, fairly progressive in its energy efficiency policy, actually does not do any externalities, per se. So we do a TRC test, but they are all monetizable actual costs.

What that brings up, though, is carbon. And the California Commission does include a value of carbon, and the reason why is because the forecast of avoided costs that a utility is going to save over the life of the measure if it is, depending on the measure, five years, ten years, twenty years, your forecast of value of avoided carbon has to consider the fact that it may have a value at some point. And if you are doing a forecast based on expected value, there is some probability that it will be zero. There is some probably that it will be high. And the expected value of carbon over the life of the measures in your forecast, just like all the other benefits of it, you know, expected capacity value savings, energy capacity value savings is looked at as a monetized cost and included in a TRC perspective.

MS. CLARK: If I can ask, didn't they actually put a price on it?

UNIDENTIFIED SPEAKER: Yes.

UNIDENTIFIED SPEAKER: I'd like to --

MR. FUTRELL: Go ahead.

UNIDENTIFIED SPEAKER: -- ask a quick question on that? Does the price have basically -- essentially a load shape in the sense that it varies over time and so it could actually be incorporated into the total system operating cost?

UNIDENTIFIED SPEAKER: That's right.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: If folks are interested, I can provide a little background, since my company, E3, helped lead the process to bring stakeholders together on defining the avoided cost for carbon and the other avoided costs. And what was agreed was we would do, basically, a fairly low value of carbon, this was done in 2004, of something like $8 per ton. And then a fairly rapid increase over time. It's something like a 5 percent rate, something like that. That's the value per ton.

Now, the question, of course, comes, well, how many tons do you save? And the answer to that depends on when you're saving energy. So we used actually 8,760 hours, a whole year's worth based on the market prices in the wholesale market to, basically, compute an implied heat rate of the unit, the marginal unit that's operating, and that gets us to an intensity saved in each hour. So I don't know if that answers the question, but, yes, it's in California an hour estimate of what the marginal carbon savings is for every kilowatt hour saved.

UNIDENTIFIED SPEAKER: Mark, can I asked a question? The topic we're on is the goal of utility conservation. And I think what I heard our existing goal is to keep rates as low as possible to non-participants. That's kind of been the goal of the Commission for years. And I heard the City of Tallahassee saying that's still their goal, even though there might be some increases in the early years but decreases in the later years.

What we're faced with, and see if I'm wrong here, is using lost revenues you're looking at immediate rate increases, what the impact would be immediately, and the City of Tallahassee is looking at longer term rate impacts. But the Commission is charged with setting goals every ten years. So is that something that we should consider as kind of our window instead of somewhere in between? We have to set -- ten-year goals is what we're setting. We come up every five years, but we set a ten-year horizon. And I'd like to hear some input. Do you think that's something we need to consider as maybe the rate impact over that horizon as opposed to lost revenues immediately or a 20-year and let it be longer?

MR. GUYTON: Excuse me. This is Charlie Guyton. I'm here on behalf of Gulf Power today. If I understand the current process, Tom, I'm not sure that I would agree or suggest that it fairly characterizes that the calculation of lost revenues or what I would call transfer payments from participants to non-participants is captured only in the

immediate term future. I mean, the way the portfolios are done, you have measures that are captured each and every year of the analysis. So I don't think we're talking about just a rate impact in year one. I think we're talking about the rate impact associated with each of the measures as they're added over the ten-year goal period.

So I don't think it's entirely accurate to think about that as being an immediate rate impact. I think the way the RIM portfolio is quantified and captured now, you're capturing the rate impact of the RIM portfolio measures over the life of the analysis, and not just in year one or year two.

UNIDENTIFIED SPEAKER: I guess I would agree in a sense that certain components of the calculation are as were represented there, but other inputs into the rate impact measure actually represent measurements of capacity that could be avoided. And so it's not a transfer payment in the sense that you are redistributing the burden in a sense of paying for existing capacity. It's about -- you know, in a sense the rate impact measure test incentivizes bringing more capacity on line, because that cost is considered a negative in the rate impact measure. Or saving -- avoiding those costs is a negative in the rate impact measure test. If you don't build that plant, that actually hurts the result in the rate impact measure test.

But I wanted to answer your broader question. I

think in a sense discounting has a lot to do with that. I mean, you're not going to see much effect from the years 29 and 30 in that test. But I think that a ten-year horizon, if it was artificially applied, would, in a sense, put -- again, would disadvantage demand-side resources compared to supply-side resources.

I mean, when you look at a new power plant, you don't just look at the ten-year impact of that power plant. And so I would say that I don't think that that kind of a look is the appropriate thing. I think the City of Tallahassee's approach is pretty much exactly what I was suggesting for the broad system-wide look. And it's obviously got to be handled a little differently with an investor-owned utility than when it's a municipal utility for the reasons said earlier. But I think that long-term look is the right way to go.

UNIDENTIFIED SPEAKER: But does every measure have the same life at the power plant?

UNIDENTIFIED SPEAKER: No, of course not.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: No. But, I mean, those are factored into the analysis. So the measures that have a very short-term impact, because they're just simply accelerated replacement or something like that, will not factor into the long-term benefits. But I think, for instance, with new home construction and that sort of thing, you do see 30-year

lifetimes of measures in those kind of programs. It's going to have a pretty marginal impact, because of discounting when you're looking at the out years, but I think you would still need to compare supply-side and demand-side resources on parity.

MR. GUYTON: Tom, I think that's the analysis that's currently being done. As you know, the goals are set for ten years, but the planning horizon is 30 or more years. And the analysis is capturing the longer planning horizon. It's not limited to the five years of initial goals or the ten-year entire goal period. So I don't want there to be a misimpression about what's actually being analyzed. I think you're capturing the longer term impacts there.

In terms of the -- I'm not sure I fully appreciated the remark about capacity avoidance, but that treatment is, of course, the same for purposes of both RIM and TRC. I mean, avoided capacity or benefits associated with conservation are both in the test, so there's no difference between the two tests in terms of that element.

MR. FUTRELL: Okay. I think we are getting into some of the technical aspects of the tests, and so I think we ought to move into our next topic about whether tests are capturing all the benefits and costs of conservation.

And, Mr. Brown, I think we've got another few questions to follow up there.

MR. KRASOWSKI: Excuse me, Mark. Before we leave this, I'd like to just comment on a few brief things. Okay?

In terms of the carbon that was mentioned, recently the Florida Public Service Commission evaluated two proposals for power plants, one coal plant, one nuclear. And carbon on the supply side is factored at a wide range of costs. So, it's my understanding we could just take that carbon evaluation cost and apply it as a savings when you go to efficiency or clean energy, okay.

To me, once again, as a ratepayer, I don't see why a utility should be paid a benefit for energy they don't provide. I know some people are into programs that do that. I don't go along with that at all, okay? You know, they should be in a free market.

In these two cases, these two cases I'm referring to, the coal and the nuclear case, the nuclear and the coal plants were compared to other fossil fuels or other nuclear fuels, but not to a matrix of efficiency. So we never got an analysis of what efficiency might do instead of building these other plants. And what I heard today, which I've heard many times before, but if we heard today that there are numerous opportunities for gains in regard to efficiency, and it has been proven through the Tallahassee program, and until we get comprehensive in our analysis, we're not going to come to understand the true bottom line of the value of any of these or

all of these programs, and we'll just keep doing what we're doing. But, I guess, the purpose of this today is to come up with, maybe, a new strategy. And that's all I wanted to say as far as this right now. Thanks.

MR. FUTRELL: Thanks, Bob. And, again, I would remind folks before you speak if you would identify yourself, just to help as we go back and build the transcript.

We are ready to move into some more specifics on the tests.

Mr. Shevie Brown is going to have our next question.

MR. BROWN: Thank you, Mark.

My name is Shevie Brown. I'm with staff. My question relates to how the demand and energy savings are estimated. And I as wondering, based on your experiences or your opinions, rather, do you think that the way that those savings are estimated, is that accurate? And, also, if you guys know of any tests or anything like that that has been conducted, as well.

MR. GUYTON: In terms of assessing potential, they are estimated in a lot of ways. For measures that have been employed by utilities in the state, they have measurable data because this Commission has required monitoring of the values that have been saved. So for measures that have been implemented, the utilities have, to the extent that they've been using those measures, pretty solid measures of the savings

associated with those particular measures.

And those can change, and they can change fairly dramatically in Florida. When we looked at this very issue back 15 years ago, we found that people were suggesting that perhaps we use savings values out of the northeast as opposed to the south. And, obviously, the weather differentials on some of these measures can be quite dramatic.

So the best source of information are the savings that are actually achieved for measures that have been implemented in Florida. And sometimes those can vary by utility, even from the northern part of the state to the southern part of the state. Once you get beyond that, then you have to look at other alternative measures, and sometimes one has to look at engineering estimates that are developed by, essentially, third parties that will quantify that. Sometimes there are measures for other utilities that are readily available that can be captured.

And if I go much further I'm going to go beyond my expertise, and we probably ought to be talking to the people that are sitting behind me that actually use those to address that. But as I understand it, there are a wide variety of potential quantifications of savings, and the best ones are the ones that are readily applicable for which we have experience in the state.

UNIDENTIFIED SPEAKER: Your question was just about

energy efficiency measures, right, and not about supply side and quantification, correct?

MR. FUTRELL: Right. Right.

UNIDENTIFIED SPEAKER: Okay. Yeah, I want to agree totally with that and just add a couple of points. First, is that there is also -- in terms of quantifying the costs, there are costs incurred at different points along the way, and I referred to this in my presentation. The cost to simply initiate a relationship with a customer can be pretty high. It takes a lot of effort to convince someone to allow a utility into their house or their business, just simply because it's a time impact on -- you know, people have to give up other opportunities in their life to spend time with a utility to decide whether or not they're going to install something or cooperate with them in some project. And then once you are there, you've got the cost to implement the measures on a case-by-case basis.

The second thing that you've got to measure is how the equipment or the change in things actually affects energy use and the load shape -- you know, I mean, the shining example that everybody loves to use in these is compact fluorescents. But the load shape for a compact fluorescent outside my house on the front porch is very different from the one in my kitchen. And so when I was alluding to cost-effectiveness tests when you're in the field and at the site, you've got to

have sort of a judgment call that's going to be made by people there and they are not going to have a detailed computer simulation model to run about, gee, we came in here to do Project X, but actually I see now that I'm here that it makes sense, actually, to do this. And I've got some of this out on my truck. I can go bring it in and install it or I can provide this service on the spot and add to the quality of the program overall.

And so I think measurement and verification is a really complex process, and I think a really sophisticated utility energy efficiency program is going to be doing that at every level of the analysis, all the way from the IRP and DSM plan all the way down to the guy with the associate's degree who shows up, you know, as the energy efficiency delivery person on the truck. And I think that it is important for the Commission to lay a solid basis for that in terms of its policy and what it expects the utilities to deliver and then get out of the way and let the utilities, whether they are public or private or municipal, do a good job of it.

MR. GUYTON: Shevie, I was reminded as well that in addition to the established programs you have a whole host of pretty robust and vigorous research and development projects that have been done by utilities in the state. So you may have experience on some of the measures from those, even some that have been rejected as not being cost-effective that would

provide another sound analytical base which would be far superior than just using general engineering estimates.

MR. FUTRELL: Similar, if you have some experience with -- you've seen studies through the years where some estimates have changed, particularly not just in the savings of the individual measures, but, for example, in folks' behavior and how they change, their behaviors changed, and where estimates have changed significantly or to some degree over time, what do some of the studies you've seen show in that regard?

UNIDENTIFIED SPEAKER: So, again, I could probably talk most about California's experience. And I agree that -- and it's been a very sort of strong element of California's efficiency program to do tracking of programs and measurement and verification over time. I think that we went through a period in the 1990s really on what was called market transformation. We were sort of trying to transform the market and use incentives over time to change people's behavior and make it become more -- it's just sort of a matter of standard business or standard construction practice, or standard industrial process, depending on which sector you are in to start using the energy efficiency technologies without a utility program. So the goal was to sort of phase itself out.

I think that right now California spends something like -- the investor-owned utilities programs are something on

the order of $700 million a year. And I think that the measurement and verification is somewhere between 8 and 10 percent of that amount of money spent on measurement and verification. And it's very important.

The way they do it is they define what they call a logic model. So what are we trying to do in terms of behavior? And then they go and they check, to the extent they can, whether they're getting customers to make choices that correspond to the logic of how they think the program is going to roll out. I think that the big area that has been sort of looked at very carefully lately in California is on compact fluorescents and whether or not they are getting as many incremental adoptions on compact fluorescent lights as they expected given their logic model. And the programs that we are seeing for the next program cycle, I think, reflect some of those changes. So there is a dynamic effect, and I do think it is important.

I think California is an outlier in terms of the percentage spent on measurement and verification. I did a quick study for the EPA, the national action plan for energy efficiency on this, and I think that there were other numbers like two percent, something like that, I think was spent in New York, and others. Obviously, you want to do it as effectively as you can so you are not spending money for nothing. I don't know if that helps.

UNIDENTIFIED SPEAKER: Would you say the bulk of their expense is on, let's say, tracking participation to make sure they're getting the amount of participation they anticipated or actually looking at demand and energy savings of a particular measure, and does that match their estimate?

UNIDENTIFIED SPEAKER: I think kind of both. I think going -- there is this exercise of spending the M&E budget as effectively as possible, so they'll look at a few different things. One is did the installs actually go out there? We use a lot of third-party contractors. You want to make sure that if we did so many of such units they are actually there. I think that there is some spending on a sample of customers in terms of their energy use, buy-in use, in terms of load management metering type activities. Measurement and verification isn't my specialty, but I don't know if that helps you.

MR. FUTRELL: Okay. Thank you. Any other follow-up on that? Okay. We'll go to our next question along this line. Steve Garl.

MR. GARL: I'm Steve Garl from the PSC staff.

Following up on the discussion of estimates and projections and customer behavior, how are capacity deferral benefits affected by the ability of customers to leave programs?

MS. CLARK: You know, I would just answer that we've

seen how they are affected when we had -- I can't remember when we had the heat wave. But we had -- what was it, in '89 or -- no, '99, or something like that. And we did have customers, the residential customers who could leave, on 30-days notice leave. And at the time there was a concern about that. And we looked at the margin of reserve. And I think you need to look at what makes up the margin of reserve that you're using. How much is bricks and mortar and how much are you relying on that demand-side management to do that.

UNIDENTIFIED SPEAKER: Can I follow on that? I've heard from Gary and from the gentleman from GRU that a lot of their benefits they are really relying on customer commitment. Is that something we should start looking at in these programs of more customer commitment, perhaps 60 days, 90 days, I don't know. I'm just throwing it out there. Is that something to look at if it's becoming more of a critical part of our portfolio?

MS. CLARK: Oh, absolutely, Thomas. This is Susan Clark. I would urge that you do have to look at that. And if you are looking at 60 or 90 days, that's not time to build a plant. And if you have significant numbers of people leaving that program, it can have a large impact. So that is one of the considerations that you need to look at when you determine how much you're going to rely on that energy efficiency or demand-side management.

UNIDENTIFIED SPEAKER: Is the question primarily referring to demand response?

UNIDENTIFIED SPEAKER: Yes.

UNIDENTIFIED SPEAKER: Okay. So we are not talking people withdrawing from energy efficiency programs, because generally that's pretty locked in, right?

UNIDENTIFIED SPEAKER: Well, when you consider some of the changes in efficiency ratings that have been put out over time and --

UNIDENTIFIED SPEAKER: I mean, in terms of customers withdrawing. I mean, customers are not going to respond to a heat wave and --

UNIDENTIFIED SPEAKER: Generally, no. No.

UNIDENTIFIED SPEAKER: -- and go out and purchase a less efficient air conditioner.

UNIDENTIFIED SPEAKER: Right.

UNIDENTIFIED SPEAKER: They might buy another one, but --

UNIDENTIFIED SPEAKER: But, for example, compact fluorescents, a customer may not like the light quality and decide to change out or things of that nature. Is that --

UNIDENTIFIED SPEAKER: I think that is taken into account in measurement and verification. They come back -- ideally you have a program where it requires return visits to certain locations on a, you know, certain basis. And you

figure out the shape of disadoption, I guess. And that's factored into the effectiveness of the measure. So that's part of those protocols, I believe.

I had one brief comment on the demand response. I'm not a big expert in that area or anything, but I have seen a number of private companies who are now packaging up demand response resources and then reselling them to the utilities. And I don't know if that's an approach that is being used much in Florida right now. The people I've talked to about it are in other parts of the country. But it can be a good way for the utilities to have a firmer basis for planning, because there is somebody under contract who is contractually obligated to deliver that DR resource. And if they don't, they have to go out and spend money very quickly to acquire additional resources or they pay a very large penalty.

UNIDENTIFIED SPEAKER: I think we started doing those. One utility, I think TECO has programs doing that, where a third-party contracts for so many megawatts of that.

MS. CLARK: Tom, the only other thing I would point out is I think there has been the phenomena of customers adopting energy efficiencies that are not just demand-side management, but then making it up with new appliances and other -- that their actual usage stays the same.

MR. GUYTON: I think the only other thing that I would observe there is that I think this is an important issue,

but it is as much an issue of program design as anything else.

UNIDENTIFIED SPEAKER: I think that the intent of the question is to -- we talked about putting DSM and supply on par, or on the same field, and maybe they're not, because of these differences. There are differences. It might be customer choice. They might want to get off of a demand response program, let's say. How does a utility plan for that? I mean, even though they do a load management, they still have to build capacity in case that customer leaves. Some of it anyway. They have to take that into account. So that's what we are trying to feel, how do you -- how do you really get them on par?

UNIDENTIFIED SPEAKER: The analogy is not perfect, but it's essentially like a capacity factor. I mean, if you say, well, we're counting on every single demand response customer to stay enrolled for a year, that's like saying we're counting on every single gas plant to operate every time you flip the switch. Well, I mean, both of those expectations are absurd.

So the question is, you need to go out and do proper measurement and verification, and then you develop a sense of what is the responsiveness of that resource to the circumstances in reality. And then that's taken into account. And if an energy efficiency measure results in bounceback from the customer -- I always forget the term, the correct term.

But as she described correctly, people going out and, basically, adding more electricity use to the system because they've saved electricity, that's got to be counted into as an effect of the measure. It's absolutely part of the calculation. And when you're talking about cost-effectiveness, you're talking about the bottom line result, not about, sort of, some artificial midpoint that Jerry picks out of the results. We want this done right.

MR. BRYANT: Mark, Howard Bryant with Tampa Electric. Just to talk a little bit about demand response load management type programs and whether or not -- there's a couple of issues. The longevity of the customer participating is certainly a key. And as Susan alluded to, in '99 and 2000, when several of us were exercising control three, four, and even five days in a row, people did begin to leave. But the other thing about load management is we typically state its demand and energy savings at times of system peak, winter and summer.

A key consideration, though, is the fact that you might need to utilize load management in April or May when you have units down for maintenance and the temperature may be only 82 or 83. And the load that you are getting for load management at that particular point in time is different than what you are going to get at 92 on a summer afternoon. And so I guess I would suggest that a kW of load management is not necessarily on an equal basis with a kW coming from a plant,

because the plant is there, and if you turn it on, it's going to work. We hope. But load management at 82 versus load management at 92 is totally different, and so you may not quite get the load that you're looking for.

MR. FUTRELL: We need a follow-up on that one, okay? Kind of along the same lines of matching supply and demand resources, we have another question from Shevie.

MR. BROWN: Yes, this is Shevie again. My question is in regards to should the avoided unit match the duty cycle of the energy efficiency and demand-side management measure? For example, displacing generation that you would use for, let's say, an electric water heater to solar.

MS. CLARK: Would you try that one more time?

MR. BROWN: Okay. Let's say you have an avoided unit, and that unit, let's just say it's going to be a water heater, an electric water heater. The question is should that unit match the duty cycle of energy efficiency and demand-side management that you would use towards a solar product, for using the generation from solar instead of electric?

MR. GUYTON: I think the simple answer to that is no. I mean, I don't think you have a correlation. I mean, you have a wide variety of duty cycles associated with energy efficiency and the demand-side management measures. You have different attributes for, you know, essentially three basic types of generation. And I don't think you have a very good correlation

between various measures where you could say this measure more closely matches a peaking type unit; this measure more appropriately matches a cycling or intermediate type unit; or this measure matches more closely the base load unit. At least that's not the way the analyses typically have been structured.

There is a great deal more flexibility in terms of the measures than there is to the match of the types of the units. And, of course, even the same types of units on different systems perform different functions, depending upon what the other units are and what their dispatch characteristics are. So I've not seen that type of analysis. It doesn't suggest to me that it would be appropriate. It's a refinement that I'm not sure the Commission would need to undertake.

MS. HARLOW: This is Judy Harlow with staff again. I know that Mr. Brinkworth from Tallahassee had -- well, I believe you said that you compared DSM to a unit with a similar duty cycle as a screen before you ran your IRP test with bundles. Is that correct?

MR. BRINKWORTH: That's right. And that's where we think that relationship does work. Is if what you are trying to do is take a universe of measures and bring it down to something that you can then create your bundles from. We chose to do that screen based on consistent duty cycles as it were. So we took measures that primarily affected peak use and

screened them against those CT curves. That's what I showed in the presentation. And you saw that for the most part those things were less expensive, the measures were.

If you do it over the measure life, you put those two things on a comparable basis. Now, our experience was that we didn't see a lot of rejection of large numbers of measures based on that. But we weren't really sure how that would turn out until we did it. And we thought it was appropriate to use that as a screen, because we didn't think it would be economically fair to screen out measures that had a low capacity factor if you want to think about measures having a capacity factor. You wouldn't want to screen those out against a base load power plant, for example, because the economic tradeoff isn't actually fair.

And so we weren't really sure how it was going to turn, like I said. And when we did the screening, we didn't actually reject that many measures anyway. But we do think that's an appropriate way to do screening, at least on a busbar basis, before you build your bundles like we did and then run them through the system analysis.

UNIDENTIFIED SPEAKER: And, Gary, I understand on your screening there were a few measures that did not pass the screen, but you carried them forward anyway into the bundles.

MR. BRINKWORTH: We did, because there were so few that failed. When we got together as a team and looked at the

screening, we said, we're only going to drop -- I think maybe in total it may have been like 25 of the 260-some-odd measures. And we said, you know, for the purposes -- and some of those 25 were things that we knew some of our customer segments were really interested in. So we said maybe we can bundle them in a way that overall the package will still be cost-effective.

MR. TRAPP: Mark. Bob Trapp, Commission staff. Let me ask some simple questions that a beach bum from Jacksonville Beach can get a handle on. There were some nuances I thought I picked up in some of the presentations this morning that I want to address with these questions, and it has to do with this matching theory. Is it in the ratepayers' best interest to pay an avoided nuclear cost for a conservation measure that doesn't operate 24/7? Boy, I stumped everybody.

UNIDENTIFIED SPEAKER: No. I mean, I think both your question and the previous question get at the point of sort of the use of avoided costs in these screening tests. And the problem is that the concept of avoided cost is a marginal concept. And when we are looking over the long-term impact of a program, the assumptions that go into a marginal cost analysis break down. They don't apply. We're talking about load changes over decades of 10 or 20 or 30 percent, or even more. And the load change can come in the negative direction from the energy efficiency or DSM measure, or it can come in the positive direction from economic growth. And so whatever

your marginal unit of energy is over those 8,000-plus hours of the year, that changes over time. And you can build that into a dynamic forward-looking IRP, or whatever, but then you get into the system analysis.

So it's sort of this strict screening tool saying let's do a -- and I agree with the gentleman from Gulf Power's point of view that you don't want to get incredibly detailed about this and pick out, you know, 30 supply-side resources to match up with 30 demand-side -- you know, all these different demand-side resources. And so I agree you don't want to screen a peak-oriented energy efficiency measure against a base load nuke plant cost.

I mean, I think I agree with your premise there. But I think also the perspective from Tallahassee where they just sort of break it into large bins, you might think of it, and screen them in groups like that also is a very constructive way to look at this approach. So I think it's sort of everybody is right here, in a narrow sense.

MR. TRAPP: So, if you take the measures and -- and the art is going to be in the bundling, I guess. You bundle them in such a way that you approximate as closely as possible the unit that you are trying to avoid, or the effect you're trying to avoid in the plan. I mean, if you do a system approach, it's going to show you the difference in revenue requirements associated with a construction plan associated

with specific units. The idea of conservation is to bundle in such a fashion that it maximizes the revenue difference between those two plans. And that's a system approach. We would keep talking about taking that system approach down to its little screening components that are trying to simplify this equation, that's where I begin to get lost and confused.

UNIDENTIFIED SPEAKER: Well, I think that was the point I was trying to make in my presentation, is you've got to have a different approach at different levels of analysis. Once you sort of say, okay, we've identified some bundles and some levels of expenditures over the next ten years for these plans, it seemed to fit in well with the IRPs for the utilities. It seemed to be more cost-effective than supply options that they might otherwise pursue. Then the next step is to get the programs actually approved. That's a separate regulatory step. And at that point you can simplify the analysis down, and you could actually use the expectations of that overall bundle in terms of its TRC score, for instance, and use that as a reference point for evaluating the specific programs that the utility might pursue.

And so I think you can sort of derive down simplifications as you get narrower and narrower in your scope until you've actually got the guy on the truck in the field who has got to make just very simple calculations in order to determine whether or not to provide a service when he's on

site.

MR. TRAPP: Let me ask Gary, when you look at your bundles, how do you separate the cats from the dogs so that you wind up with something other than cogs? You know, it seems to me if you combine a black dog with a white dog, you get a Dalmation, which is a desirable breed. But if you combine cats and dogs, you come up with a cog. And you have some programs that may be very, very revenue detrimental, but they are being offset by other programs that are very beneficial.

MR. BRINKWORTH: Well, I should say I think when we bundle the measures, or at least when our team, Navigant and the rest of the team, worked with us on those measure bundles, I think our objectives were first to look at what end use we were trying to attack. Like, for example, space conditioning is one of those things I mentioned in the pie charts.

And so if you look at space conditioning and say what kind of measures do I bring together that are complimentary that I can put together in a package that makes sense to address that particular end use or that particular piece of the market. And then you do that for a couple of other end use segments. Then when you put those together, you have to recognize that they play off of each other. And so there are some adjustments that you make when you roll those bundles up into the portfolio. You have to recognize that some of these bundles might knock heads with each other a little bit.

Somewhere in that process some of those individual measures, if they were pulled out of the bundle and subjected to a static cost/benefit screening probably wouldn't pass. But when you put them together, you allow them to kind of offset one another so that some extra savings may be -- if you want to think about it that way, some surplus savings from one of the measures that was in that bundle kind of offsets the other one.

And, again, that's what we saw when we did our analysis, that when we used our single avoided unit approach to screen things, we got a completely different result than when we screened based on measure life with sort of like duty cycles, because we recognized in our particular situation that a combined cycle unit, for example, with the kind of avoided costs that we were looking at versus our embedded system cost was going to reject a number of measures that really don't have the performance characteristics of a combined cycle unit, at least not on our system. And we knew there were clearly measures that were only going to operate, like the graph I showed this morning, in the 20 or 30 percent capacity factor range. It didn't seem rational for us to screen those out against a resource that would run 60 or 70 percent of the time, or maybe more.

Again, on a system like ours, it would be different than a system like Florida Power and Light's, for example. But I think when you put these measures together, at least our

experience was, and our design team basically convinced us that we wanted to carry the most measures we could as far into the analysis as we could get before we start screening things out. And so left to ourselves -- and that's one of the reasons when Tom ask me what about those measures that screened out, we kept them anyway, because our argument in the team was, if they really are that bad, they'll fall out later, because the bundle won't perform correctly, and then we'll have to go back and back those out.

And as it turned out, they didn't penalize us any. We still showed, as I showed in the slides, some significant benefit, again, looked at over the planning window.

MR. TRAPP: So simply stated, it is possible out there that you could have one program that was absolutely demand reduction and is kind of a peaker.

MR. BRINKWORTH: Uh-huh.

MR. TRAPP: And then you can have another program that's nothing but energy. And normally the energy would be thrown out because it was a RIM dog, but if you put the two together, you might actually get not the avoidance of a peaker, but the avoidance of a midrange base load unit, which would have more value presumably.

MR. BRINKWORTH: That certainly was our experience.

MR. TRAPP: Thank you.

MR. BRINKWORTH: And I guess, Bob, just to follow-up.

An example that came before the Commission recently was the Progress Energy program where they combined solar water heating, a big energy saver, with load management, a big peak saver, combined them together, and it managed to pass RIM and the other tests. The Commission approved that and it has been offered to the customers.

MR. FUTRELL: Any other follow-up on this discussion?

UNIDENTIFIED SPEAKER: I would just point out I think that's very important when you're looking at the cost tests and what they apply to make this distinction between whether the cost tests are important to apply measure-by-measure or whether it is the portfolio that has to pass the cost tests. It seems like that should be part of the discussion, as well.

Again, in California the focus is on the overall portfolio. And the reason why is it's not so much this mixing of peak measures versus energy saving measures, that would be important if you kept the RIM test, I think, but it's also a customer equity issue. You know, you want to have energy efficiency programs that are available for all your customer classes. And so, for example, in one area that's really problematic, if you only do measure-by-measure cost-effectiveness is low income, because often you have to provide high incentives because they have very little capital, or what have you. So a low income set of programs may not pass the cost-effectiveness screen that you have, but including

those with the others, the whole portfolio can still be cost-effective.

We also had the example of an industrial customer this morning that was talking about not having programs for their particular application and others. So in order to get the sort of broad range of customer classes involved in energy efficiency programs, it may be important to do a portfolio basis.

MR. McWHIRTER: May I ask a poser? John McWhirter, who represents industrial customers. In a bygone era, when you did a cost of service study, and you tried to determine what cost it is to serve an interruptible industrial customer, and the theory was that that customer would be a high load factor customer. Principally, it would work, you know, 80 percent of the -- an 80 percent load factor. And they said generation planners say we don't have to build a plant to serve that customer, because we can interrupt him at any time; and, therefore, that should be taken into consideration with some modifications in the cost of service study.

In the current era, an interruptible customer is considered to be a conservation program. And from that viewpoint they say, well, all we need to deal with this guy is a peaker, and so the avoided cost is not the avoided cost of a base load plant, it's the avoided cost of a peaker. And, therefore, all interruptible programs are determined presently

to be not cost-effective. I was wondering what your philosophy was on that.

UNIDENTIFIED SPEAKER: I think that the overriding sort of avoided cost estimation should be basically looking at the utility resource plan. What investment it is that's going to be avoided? I mean, that's the ideal thing, so you could link up what your program is doing with what behavior you're changing or what cost the utility is actually spending.

I'm not familiar enough with what's happening in Florida's resource plans and the need for base load versus peak load to know which it is. Both can provide capacity, it just depends on the other needs of the system.

MS. CLARK: Bob, could we just add -- Dennis would like to add something on the issue of the bundling.

MR. BRANDT: This is Dennis Brandt. I guess the only concern I have -- or one of the concerns we have about bundling is if you take measures that you know aren't cost-effective and you bundle them with measures that are cost-effective to come up with, in a sense, a portfolio, that by math was going to be less cost-effective than it would be if only cost-effective measures were there, part of your concern is -- you've got to be really, really good at forecasting the take rates of the measures that weren't cost-effective versus the ones that were, or conceivably you end up with an overall portfolio that's not cost-effective. So, to the extent that you can rely on measure

cost-effectiveness, you kind of avoid that problem. So we've always strived to try to focus as much as we can on measure cost-effectiveness.

MS. HARLOW: And, Dennis, let me ask you this. This is Judy. If you bundle measures that are noncost-effective -- let's just use RIM as an example, under the RIM test -- with those that would be cost-effective under the RIM test to create that bundle that Mr. Brinkworth is talking about, whenever we are looking at cost-effectiveness, there is some assumption there about what your incentive level is that you're going to pay the customer. So if you bundle that noncost-effective measure with a cost-effective measure, are you, in effect, reducing the incentive that you would pay under that cost-effective measure as opposed if you looked at it alone? Sorry for that convoluted question.

UNIDENTIFIED SPEAKER: Well, first of all, I think it doesn't really matter what cost-effectiveness test we're talking about. So regardless of what the end test is, it's really a function of bundling things that pass and don't pass. And you're right, to make something that doesn't pass pass, you are going to have to, in a sense, subsidize it from the one that does. So I guess one way to do that would be to lower the incentive for the one that does pass and pay more for the one that doesn't.

UNIDENTIFIED SPEAKER: I think, too, what we heard is

with Mr. Brinkworth from Tallahassee that some of the programs were left in because they had desire from the customers to offer these types of programs. There was a public outcry, if you will, for them. And this goes to what I think Mr. McWhirter brought up is that municipalities are on a different capital structure than an IOU. They're a municipality. Their customers are their constituents, as well, where with an investor-owned utility it's a little different. So I think we have to keep that in mind that there may be a little bit different points of view here as to why things are done.

UNIDENTIFIED SPEAKER: And I agree to the extent that if something makes sense for the customer, we ought to be telling them about it and, you know, we can't offer it through an incentive, you can't offer it through a program, but -- for instance, many of the things that we tell our customers about in our energy audits don't necessarily result in our programs. So, you know, we tell them about things for them to do on their own that makes sense for them to do. And to the extent that they do them, we encourage them. They ought to do those things. It doesn't mean we have to have a program to address them.

UNIDENTIFIED SPEAKER: That led into an interesting question I have. Does the utility's customer education programs kind of go counter to RIM, because a lot of what you tell them end up lost revenues to the utility. Am I right on

that or is it --

UNIDENTIFIED SPEAKER: I mean, to the extent we tell customers to do things that we don't have programs for, there are lost revenue associated with those.

UNIDENTIFIED SPEAKER: Okay.

MR. GUYTON: But, as you know, there is a specific statutory mandate to do that.

UNIDENTIFIED SPEAKER: I understand.

MR. GUYTON: So, I mean, it's justifiable under FEECA because the audit program is required.

MR. TRAPP: Do you tell them about vampire load? Do you tell them if they just get a gang switch and put their televisions, and stereos, and clocks, and everything all on one gang switch and turn it off when you go to work that they would save ten percent of their energy bill?

UNIDENTIFIED SPEAKER: We do. We call it phantom load, but, yes. So we do talk to our customers about phantom loads. You know, your chargers and your set top boxes and all those types of things that you don't think about when we do energy audits, you know, we educate customers about those types of things.

MR. KRASOWSKI: Excuse me. Have I mentioned lately that as a customer of an IOU, I don't appreciate that I have to pay a benefit to that utility for their lost revenue due to efficiency. I think I said that already, but the point comes

up again now.

Any programs that they have to inform their customers about energy saving programs that they aren't compensated for have been mandated, you know, so they have to do that. That's one of the two program, DSM programs I believe the IOUs in the State of Florida have to provide, okay.

Now, I don't know if it's appropriate at this time, but I understand that the DSM programs are completely voluntary. Now, if the standards of -- if the Florida Legislature -- and I don't know, this might relate also to Tallahassee. It's a question I have for Tallahassee. If those standards that are contained within the DSM programs were raised to be the minimum standards applicable to energy use in Florida -- let's take, for example, appliances. If people could only purchase high energy efficient appliances and then the monies that were going to be directed to building the power plant to provide energy for the inefficient appliances they would have bought are applied to assisting these people pay for the increase in efficiency over time, well, then, you wind up with a more efficient operation, and then you don't need the plant, and then people start saving money, okay. If those DSM programs were addressed in that way, they were made to be the new baseline, why couldn't we do something that way?

And I'll ask the gentleman from Tallahassee a question. Did you consider through county codes or city codes

the requirement of some of these programs that you've developed, like in particular the building construction codes specific to your town to bring up all of those efficiencies? And I'm sure you have all the background information, Florida Solar Energy Center and, you know, appliances and things like that.

MR. BRINKWORTH: This is Gary Brinkworth. In our design process we clearly reflected not only where the building codes are now, but as you saw on our portfolio, we have some new construction measures that are part of that which recognize where the Florida Building Code is headed. And, also, some likely additional adjustments to that that if we had to make a projection about over time. So I think my answer, if I understand the question right is, yes, we did recognize both increasing efficiency standards for appliances, as best you can, I mean, as you look out in the future I'm not really sure where those are going, but you figure they're going up, and building code standards, as well. So we tried to reflect those in our impact analysis as we were building the bundles and rolling that up into a portfolio.

So part of that is embedded in our analysis already. The rest of it I guess we have to get through M&V and other kinds of monitoring processes as this portfolio actually plays out in our service territory, and we get to make a better assessment about whether we are getting the impacts that we

thought we were for the incentives that were put in.

MR. KRASOWSKI: Thank you.

MR. FUTRELL: Okay. Well, the magic word was mentioned in the last comment back and forth about lost revenues, and we have a question on that line from Ms. Joanne Chase of our staff.

MS. CHASE: Hi. I'm Joanne Chase with the PSC staff.

My question does have to do with lost revenues, and it's considered a cost to the utility in these analyses, and my question is, is it really, given how ratemaking works, at least here in Florida? We all know that revenues of utilities will fluctuate up and down for a lot of factors. Sometimes it's greater than expected due to weather. There's no -- I don't think there is any guarantee for a utility that their revenue is like trued-up or that they are always recovering revenue that is lower than they might have expected.

And so my question is, is it truly a cost to the utility all the time? And should we perhaps be considering something like the utilities, where they are, their earning level? Whether they are earning within their authorized range, whether there is growth in that utility service area that maybe can overcome the lost revenue? I would like your thoughts on that.

MR. GUYTON: This is Charlie Guyton. There are a couple of -- not that this question reflects it on your part,

Joanne, but there are a couple of erroneous impressions that have been stated around the table today about lost revenues.

Lost revenues is an element of cost and it's really probably a bit of a misnomer, because it's really talking about a shift of revenue requirements from participating customers who are avoiding billing determinants by employing energy efficiency measures. And the revenues that are associated with those losses are going to have to be made up by the participating customers, because there's a fixed or finite amount of revenue requirements that's necessary for the company to earn its authorized rate of return.

So if you diminish billing determinants over here, and you still have a fixed amount of revenue requirements you have to recover, what happens is that the general body of ratepayers are going to have to pay higher rates to make sure that the revenue requirements are covered. That's the underlying assumption in the RIM test. It is, if you will, a simplifying assumption. But one has to make some assumption about revenue requirements and their recovery for purposes of trying to measure the rate impact.

I don't think it is practical to try to define the nuances in terms of where a utility is in terms of it's earned return as to this element of what I'll call shift or transfer payments of revenue requirements from one subset of customers to another. It isn't any more practical to try to address that

than it is trying to address cost savings measures that a utility might undertake between revenue requirements cases.

It is a necessary simplifying assumption of the analysis, and I think it's the most reasonable assumption to make. But what I want to take issue with is the suggestion that the utility gets a benefit of lost revenues. The utility doesn't get a benefit of lost revenues under the RIM test. What the RIM test avoids -- what the RIM test assumes is the utility will be ultimately made whole around its revenue requirements. The people that get the benefit under the RIM test to the people that don't are the participants. They lower their portion of the revenue requirements and they shift the parts of those revenue requirements that they're not going to have to pay to the nonparticipating customers.

So it's not the utility that gets the benefit. It's the participants that get the benefit to the detriment of the non-participants. And that's one of the values of the RIM test. That is one of the faults or omissions of the TRC test, because it allows that shift from participants to non-participants. And that's why the Commission has, over a period of close to 20 years now, stuck with tests that don't come up with DSM winners and losers. If you use the participants test and you use the RIM test, then you know both groups of customers, the participants and the nonparticipants, will be made whole. But if you go to the TRC, you're going to

end up with winners and losers. And the suggestion that you ought not have conservation winners and losers, pitting participants against non-participants, particularly when some of the non-participants may be people that were early adopters, people that have already adopted, or people that just don't have the wherewithal to adopt. So I hope that's responsive.

MS. CHASE: It is, and I understand what you are saying. I guess my problem with that is that would be true in isolation, if we were to look at this situation in isolation. But there are a lot of other factors that are affecting the utility's revenue requirement up or down. And if you -- and the only way that those revenues are passed on to the general body of ratepayers is if the rates were to actually change. And that would only happen if you were -- if the utility was outside of its, you know, its range of return on equity.

So, I'm not saying that that's the answer to look at that, because I realize that complicates things probably quite a bit. But giving it some other weight or giving it some other consideration, because it isn't -- it isn't always a true cost, in my view, unless the utility is -- unless it's significant enough, and especially a utility were there is growth in customers. You're going to be getting additional revenue with basically the same investment you got due to those additional customers. So it just seems like that's not being factored in somehow.

MR. GUYTON: Well, I understand and appreciate the observation. I think it is a true cost, but, as you know, between revenue requirements cases there are a variety of measures that change up and down as you go through. And as you analyze this, you can't capture all of those. And the alternative is, is that when we're trying to do the analysis, one would update that every time you proposed a new program or, for that matter, you could revisit it in six months, 12 months in.

The alternative would be to create kind of an instantaneous series of ongoing revenue requirements proceedings, which are just not practical. And because that's not practical, the RIM test makes that a reasonable but simplifying assumption. And I think it's a better assumption to make than -- at least any that I've heard advanced, given the reality of rate setting over a period of time. And that it is episodic rather than continuous.

MR. KRASOWSKI: Hey, Mark, could I ask a question, follow up to that?

So let me make sure I've got this right, if I may.

MR. GUYTON: Sure.

MR. KRASOWSKI: And I really appreciate your explanation, it has clarified things. So in terms of existing financial commitments, the utility has a specific concern in regards to the RIM test being applicable to energy efficiency

costs and stuff. But do you make a distinction for new energy, like the lady was just implying? So if we were to hypothetically -- if we were to marry efficiency to meet all new needs, there would be no need for a RIM test to justify that cost and the utilities would have no justification for wanting to recover the lost revenue in that specific instance. Is that not correct?

MR. GUYTON: I'm sorry, but I just didn't understand your question.

MR. KRASOWSKI: Okay. Well, that's all right, because that happens a lot with me. But let me try to clarify it, then, okay? Is there a distinction between -- now, what I understood from what you said, that your concern was that if we went to an efficiency practice that saved energy and money to the customer who was putting in the efficient unit, then that -- because of lost revenue -- because of your commitment to the financial profile of your existing condition, that lost revenue, other people would have to fill in the gap. Correct? I mean, if there is an efficiency, the RIM test allows you, the utility, to reclaim the lost revenue?

MR. GUYTON: No. That's kind of where it breaks down. I mean, what the RIM test recognizes is not that there is going to be a recovery of that, but that if you have ten billing determinants that you're spreading your revenue requirements over, and you lose three of them, then you -- and

now the cost per billing determinant for the remaining seven is going to go up to get the same amount of revenue. And that's all that the RIM test recognizes, that the revenue requirements don't change. It's just who ends up paying the revenue requirements change.

MR. KRASOWSKI: Okay, yeah. Okay. I got that.

MR. GUYTON: Okay.

MR. KRASOWSKI: Okay. I'll accept that. So there is your preexisting condition. You have the ten that were paying in. Now only seven are paying in. So their rate goes up.

Now, if five more people move onto the system, and those five are efficient, energy efficient, there is no impact on the ten if those five are -- electricity is provided through efficiency. So what I'm trying to get from you is that if you cover new generation needs through efficiency, just the new portion, just that fraction -- or not fraction, it's a substantial amount, but that portion of it, through efficiency, and you do it in an incremental way over the years, year by year by year, there is no cost, lost revenue to the utility. And the utility is trying to claim a benefit from efficiency that's not -- that they don't own. So would you agree to the idea that if efficiency represents growth, the displacement of the growth need, there is no claim to displace revenue by the utility?

MR. GUYTON: No.

MR. KRASOWSKI: Why not? Could you please --

MR. GUYTON: I'll try. What you're developing here through a rate is the relationship of costs and expenses to revenue. And one can't necessarily equate the cost associated with growth to just the cost of new generation. There are a whole host of other costs that are captured through a rate. I mean, there is distribution, there's transmission, there's administrative and general cost. And one can't look at it simply as a piece-part of generation in isolation. And the general assumption of ratemaking is that for those new customers, the general relationship between revenues and expenses are going to be the same over time as your existing relationship.

Now, that's a simplifying assumption, because one doesn't know how the relative expenses and revenues in that relationship is going to change over time. But I don't think the corollary that you are suggesting is appropriate or is necessarily the only assumption. But that relationship is going to be completely offset.

What the utilities are planning for and they're capturing in their calculation right now is avoided cost associated with new incremental generation. And they're capturing the costs associated with serving that new customer. So you're capturing that in the cost-effectiveness test right now. So I don't think there is a one-for-one offset.

If you capture it due to energy efficiency, what you're measuring is the relative ability of energy efficiency to recover those costs as opposed to a supply-side alternative. And if it is more cost-effective to do it through demand-side than it is through supply-side, then the test will show it is cost-effective, and the DSM measure will be implemented.

However, if it's more cost-effective to do it on the supply-side than it is through the energy efficiency, it won't be cost-effective; and, therefore, you ought to build the supply-side option. And that's what the test shows.

MR. KRASOWSKI: Well, I appreciate your explanation, and maybe I oversimplified it by painting a picture that would have made all new generation totally separate from the existing. But I still am interested to see new expanded clean energy efficiency separated out from the scenario to get a true value of that, because I don't think the utilities deserve an income from that, from that portion, that element of that.

And as far as understanding which supply-side or demand-side is most cost-effective, and cost-effective includes how it impacts your business in the definition, but with trying to understand that, I don't see how that's being done today, because efficiencies are not completely analyzed in the state of Florida, as far as I understand. The program hasn't been developed to the point where we really have comprehensive insight. And the comparisons -- when there is an application

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

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

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

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

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

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

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

MR. TRAPP: Do you concur with Charlie's assessment that the purpose of RIM is only to address cross-customer

subsidization, and that the company being altruistic has no stake in the game with respect to lost revenues?

UNIDENTIFIED SPEAKER: Well, I agree with Charlie to the extent that I understand Charlie, and let me explain what that means. (Laughter.)

MR. GUYTON: Oh, please don't.

UNIDENTIFIED SPEAKER: The lost revenue component is, I believe, exactly as he explained it. It's the fact that a set of participants are no longer using a certain amount of kilowatt hours, thereby reducing the base revenue component. And so that base revenue component was established in a previous rate case, and it was determined to be appropriate to manage the utilities' costs that they would incur on a going-forward basis. And so that piece is now going to be shifted over to other ratepayers at some point in time.

MR. TRAPP: Other than perhaps an argument for low-income customers, then it just comes down to a policy decision by the Commission as to whether or not they want to continue to pursue with this concept of no losers, everybody wins with conservation, or you didn't conserve, tough. You get to pay a little extra. Is that what it comes down to?

UNIDENTIFIED SPEAKER: I think we've talked among ourselves and suggested the fact that we really are reaching a policy point in time. I personally believe that.

MR. SIBLEY: I would like to jump in, if I may --

John Sibley of the Southeast Energy Efficiency Alliance -- on the dialogue around the burden-shifting aspect of RIM and what's going on there. Because, I mean, the overriding concern should be, should it not, to provide the power that Florida needs to maintain its quality of life at the lowest overall cost at the lowest general revenue requirement. And to say something passes the RIM test, doesn't really tell you that -- I mean, it's clear that energy efficiency can help with that, can reduce the overall revenue requirement. And to say that a particular measure doesn't pass the RIM test, doesn't necessarily mean that you are not going to be able to reduce the overall revenue requirement. It's really telling you about this cost shifting question.

And that's not really a cost-effectiveness question, if you frame it that way. It's a fairness question. It's a question of should you have winners and losers. But there are a lot of ways of addressing a fairness question that are other than throwing out a measure that is cost-effective for the system as a whole. One way to address fairness is to be sure that all classes, and easily within classes, everybody has access to the same kinds of measures or programs that will allow them to be more cost-effective.

If you've got a situation such as was mentioned where some people just don't have the means, and you can have like what you do with weatherization, you can have responses within

your system that address that issue. It seems to me there's a flip side of that which is that, you know, energy costs are going up for all of us. One of the ways that customers can manage their energy bills is through energy efficiency opportunities. And one of the things you're doing with RIM is you're eliminating energy efficiency opportunities for people who might like to be participants.

So it seems to me that if you think about it as a burden shifting thing, which makes it a fairness thing, then you need to think about the ways within the system that you can adjust to make the system overall fair, not just say that means we've got to throw out a measure that is clearly cost-efficient in terms of reducing the overall cost to the system.

MR. FUTRELL: I would like to follow up Howard --

UNIDENTIFIED SPEAKER: Can I --

MR. FUTRELL: Sure.

UNIDENTIFIED SPEAKER: Not to butt in, Mark. I'm sorry. At my age things don't stay in here very long, and so it's, you know, kind of helpful. Just to clarify our perspective, and when I say our perspective, I really think it is the utilities' relative to what was said about RIM denies the opportunity for energy efficiency to be done. We would not agree with that because, case in point, this past November when we had our last workshop, I think you were able to see a multitude of measures that are, in fact, energy efficiency

measures that are RIM cost-effective and have been for years and continue to be promoted with our customers. And that's kind of across the board for all the utilities. So we wouldn't agree with that.

And I guess I would add to that the fact that we've heard about the EEI -- or not the EEI, but EIA, Energy Administration -- we've heard about some of their statistics being provided here today. And I think if you will look at some of those statistics you'll find that Florida utilities, for the last five to six years, have ranked extremely high. If not in the top ten, certainly within the top 20 or so. And I think you will find Florida Power and Light just might still lead the nation in what is being accomplished through energy efficiency relative to what's being reported. So we would take issue with the fact that RIM specifically prohibits energy efficiency measures from being installed in the marketplace.

MR. FUTRELL: Howard, on the idea of lost revenues, obviously, with the existing programs that are offered, there is a level of lost revenues occurring right now that are tolerable because they pass the RIM test. Is there a way, some sort of -- and maybe someone can help us. Going forward is there a way, given that we're in -- despite our current economic conditions we find ourselves in, there is still projected -- growth is expected to continue. We're still in a growth state. And given that, is there a way to get some sort

of a sense of is there a level of lost revenues that are tolerable, given we're in a growth state?

UNIDENTIFIED SPEAKER: I don't know how to respond. I don't have a response necessarily, just to think about that.

UNIDENTIFIED SPEAKER: I can talk a little bit about a tool -- we have got this exact same question in the National Action Plan for Energy Efficiency, which the Department of Energy, EPA, is leading, and they asked our firm to do, basically, a non-proprietary calculator tool that is essentially a revenue requirement calculation with estimates on forecasts of costs, forecasts of growth, and it's publicly available.

I'm sure the utilities could to a similar type of analysis, but you can, in fact, do a forecast of growth and a forecast in the changing growth and look at what happens to, you know, equity returns on, you know, investor-owned utilities or debt coverage ratios on a publicly owned utility, and we have.

MR. FUTRELL: Any more follow-up on lost revenues?

Yes, sir.

MR. LILLY: I think that's an excellent point that the -- my name is Henry Lilly. I'm with CF Industries. I think that's an excellent point, and I appreciate your question so much. And we all know that we live in a state that people just can't get here fast enough and construct new houses, and

the rate of growth with the utilities. And it somewhat seems to me absurd that we talk about loss of revenues because someone would be more efficient and ask for an incentive to be more efficient when we are exploding in growth all around.

I'm not advocating that it's the right thing to do, but we see, and especially down in Polk County where I come from, impact fees. And folk who are coming here sometimes are paying higher taxes, and the impact fees, because folk are moving here and bringing children into our school districts. And so we see that all over Florida, I'm sure. But to me it seems quite illogical to talk about loss of revenues when we're exploding in growth. Just a comment.

MR. FUTRELL: Thank you.

UNIDENTIFIED SPEAKER: One last comment, Mark. I think, before we move on from lost revenue, I kind of agree with, I think, the gentleman on staff that was asking -- at least with the question or premise, does it come down to a policy decision? And from my perspective, it seems like it really does. It seems like right now with the current cost-effectiveness test that Judy so eloquently put up this morning, the policy is really to keep non-participants, so those customers who are not doing energy efficiency keep their bills as low as possible. And I think that the current policy with the RIM test probably achieves that.

And most other states I believe -- the only other

state that I know that takes that policy choice is Georgia, but I could be wrong. There might be a few others. I think most states look at it differently. They look at overall would my energy efficiency program reduce bills? So including both the participants and the non-participants, recognizing that there is a transfer. Okay. So I do think it comes down to a policy choice.

MR. FUTRELL: Thank you.

And we'll move on to our next question and something that we've touched on earlier in the presentations, and Ms. Clark mentioned in her opening remarks this afternoon about the effect on emissions.

And Ms. Webb has a question to follow up on that.

MS. WEBB: Yes. Like Mark said, several of the formal presenters did discuss whether energy efficiency and demand-side management reduced emissions. And it seemed the overall answer was yes. But when I spoke with Ms. Clark, the lead off question, you did indicate that that was not necessarily the case. And I would like for you to expand on that a little bit if you would.

MS. CLARK: I might quickly get beyond my ability to do that. But as I do understand it, it's a matter of what is the generation plant you are avoiding and how does it affect your dispatch. So you might have -- you might, in fact, be not dispatching the plant with the least emissions, and so your

emissions actually would go up.

Now, I'm sort of doing that from memory from a presentation that was given to the Energy Commission. And let me just see if there is somebody who can add a little bit to that.

MR. BRANDT: Hi, this is Dennis Brandt. I think, first of all, it depends on the emission type. I think that also is a consideration. But if you think about it, if you have a very, very efficient plant that you are going to avoid and you're going to run your older plants that were less efficient more, then you could potentially have a case where you actually increase emissions. So, you know, it's the whole effect of how efficient the plant you are avoiding versus the rest of your fleet.

MR. TRAPP: But if you do a system analysis, and that system analysis takes into consideration the sensitivities associated with some assumed cost for carbon emissions, that will show you the effect on an environmental dispatch as opposed to an economic dispatch, won't it? So is that not yet another test we need to look at?

MR. BRANDT: Well, I think the question was does it increase emissions or not. So I'm not sure --

MR. TRAPP: Well, I agree with your answer that it may.

MR. BRANDT: Right.

MR. TRAPP: Anything may or may not increase emissions, and it may forestall the installation of a more efficient utility supply-side measure.

MR. BRANDT: That's correct.

MR. TRAPP: But my concern is with whether we are doing system analyses, as we do in power plant certifications, or whether we're doing simplified static RIM/TRC analyses, kind of going to the Gary Brinkworth approach of let's test our assumptions through system analyses.

MR. BRANDT: And I think when we talked earlier, your question in that same area is, you know, after we do our cost-effective screening analysis that we talked about, FPL actually does a complete system analysis in the DSM portfolio.

MR. TRAPP: So the question is should you include in that analysis maybe a look at an impact on emissions?

MR. BRANDT: It's something that very well could be considered.

MR. TRAPP: Because, I mean, I think part of what I'm hearing today is that we are faced with a new issue on the table that we really haven't had before. Well, we've had it before, but we have addressed it before. We put SO2 in NOX. We internalized those costs.

MR. BRANDT: That's correct.

MR. TRAPP: We have one sitting out there that's still external, though. But everybody suspects that maybe it

should be internalized, but we are not quite there yet. We're trying to figure out what to do in the meantime. So it seems to me that what -- as Bob suggested earlier, what the Commission has done at least in need determinations is to run some of those sensitivity tests. Maybe we need to add that additional level of sensitivity testing when we set goals.

UNIDENTIFIED SPEAKER: Well, I think this goes back to the discussion that was earlier about whether you run sensitivity analysis rather -- or there's actually a decision about what that cost should be.

MR. TRAPP: Well, you've got to assume what the cost should be before you do the sensitivity analysis. But, I mean, again, the sensitivity analysis to me fine-tunes your final decision. It doesn't necessarily tell you what to do, it just kind of fine-tunes the inputs with which the policymakers then have to make the tough choices in it. And, you know, it ain't a science, it's an art.

UNIDENTIFIED SPEAKER: Yes, sir.

MR. BRINKWORTH: Mark, Gary Brinkworth with Tallahassee. Since we are talking about this emissions impact and DSM, and all that stuff, the results I showed in our cases from this morning did include carbon costs in those total system revenue requirement bars that you were looking at. So we did, in fact, put an estimate of what we thought CO2 compliance might be, both a low, medium, and high estimate in

our cases, so that that would come out in our cost-effectiveness analysis.

And it is part of what allowed some of those DSM portfolio options to look even more to show an even bigger gap between the base plan and the plans that have the portfolio in it is because there were some additional CO2 compliance costs in there. And we looked at them both with and without, but, I mean, we went ahead and did that because we know that this issue was coming up.

And we also saw a little bit of what Dennis was talking about in that our particular generation fleet has some inefficient units in it right now. And the DSM portfolio impact in the early years actually drove up our emissions profile, because we were retaining those older units longer than we would have in the base case where we retired them and replaced them with a more efficient generating unit. So we kind of saw both of those effects, but they are captured in the system analysis like you're talking about.

MR. TRAPP: But when you pick, how did you pick? Did you pick in favor of increasing those emissions, or did you pick in terms of reducing those emissions?

MR. BRINKWORTH: Well, I think we ask our commission which way they wanted to do, and they actually had a series of criteria that they wanted to apply.

MR. TRAPP: They had the balance.

MR. BRINKWORTH: Right. The balance between the vote profile --

MR. TRAPP: They vote, we don't.

MR. BRINKWORTH: -- and strict cost.

MR. FUTRELL: Okay. If there's no other follow up on that, let's take about five minutes and take a little break, and then we'll get back and try to get to the end here. We've got a few more questions that staff wants to ask, and then allow anybody here to throw anything open to discuss further. So we'll take about five minutes.

(Recess.)

MR. FUTRELL: Okay. We've got a couple of more questions from staff, and Mr. Garl is going to ask our next question.

MR. GARL: Steve Garl, again, from the staff.

Hearing the City of Tallahassee's discussion about kind of modifying their criteria for the RIM test brings up a little broader question. Should a utility use a banded approach to cost-effectiveness?

MR. GUYTON: Steve, this is Charlie Guyton. I really don't know how to answer the question without knowing specifically what you mean by a banded approach.

MR. GARL: For example, a band like in a range. Like in the case of the City of Tallahassee, they said they pulled the test from one down to .75, and that has moved more measures

into consideration.

If we put more bands in there and maybe weighted them and, obviously, there would have to be some bottom point where it wouldn't be considered, maybe even combining tests and making acceptable marginally acceptable bands to not just throw out something because it didn't meet some arbitrary level.

MR. GUYTON: Well, I was with you until you stopped at arbitrary level. There's nothing under the existing cost-effectiveness rule that would preclude utilities from attempting to justify something that didn't pass RIM at 1.0. This Commission in its goals proceeding said it was going to set goals based on RIM at 1.0, and it gave the utilities flexibility to come in and propose things that might be below that.

The Commission made a policy decision to craft things, programs so it would have the information to have all three tests available to it. And then after it made that policy decision to ask for all three tests, it subsequently in setting goals, decided that it was going to limit it to two tests, participants and RIM, but gave the utilities flexibility to look at things that may not pass RIM, but might pass TRC on kind of a case-by-case basis.

That was the Commission's policy decision and, certainly, one it was in a position to make and it has chosen to make. And that policy decision was based upon about ten

years of fairly intense debate about what the appropriate cost-effectiveness measure and choice of those measures should be. And that was largely framed RIM versus TRC debate, although I think it's probably more properly characterized as RIM plus participants versus TRC.

But I think the simple answer is that the utilities have that flexibility. They've chose not to do that to avoid having DSM winners and losers, so that's certainly a reasonable position for the utilities to take.

MS. HARLOW: Charlie, this is Judy. One way to look at a banded approach on a cost-effectiveness would be what Steve referred to which is to look at a banded approach on the result. Another way would be similar to how we look at supply-side options at the Commission, which is to change the inputs. For example, fuel. The utilities often do a high base case and a low fuel estimate when they do a need determination analysis.

And, I know when Mr. Futrell asked us to go back and look at conservation and come up with any questions we might have about changing the methodology, I've worked with this so long that I thought I was a little stuck in a rut. So I thought how else can I look at this and trigger new ideas. So I went and look at a need determination. And I thought, well, what are we doing in terms of supply that might be different, because my feeling is we should look at these things in a

similar way. And so I wanted to ask you how you felt or the other utilities felt about any kind of a change in a banded approach or looking at various changes in inputs that go into the cost-effectiveness test.

MS. CLARK: Judy, I guess -- I think Charlie will answer this. This is Susan. It just seemed to me when you are looking at cost-effectiveness tests, you know, it's how far you want to go in setting your goals. And getting to your inputs, I do think that you may want to test the validity of your inputs. Do these make sense? And in that scenario you might use different values.

But getting to how you set the goals, I think certainly -- well, shouldn't you favor those programs that have no losers over other ones? I mean, it just seems to me that that is a good way to approach it. Now, the question is should you go further than that? And I think as Charlie pointed out, the Commission did leave the flexibility to do that. And I think their words were something where, you know, it fails the RIM by a marginal amount, but there are significant benefits that you wanted to see the utilities come in with those programs. So Charlie's right. In your order you do leave the flexibility to do that.

And as you did those initial goals, you asked the utilities to come in with goals that are set on both criterias, and the Commission looked at that and made the conclusion to do

the RIM. So I don't know -- I guess I'm not sure that I think that kind of banded approach would be helpful.

MR. GUYTON: There's one other observation that I would share in that regard. At least when you are in goal setting, I think the utilities are going to be a little bit reluctant to embrace the banded approach if you are going to use it to set goals. Because one of the outstanding issues from the original goal proceeding that the Commission intentionally left open was what is the impact if you fail to achieve your goals, and will you potentially be subject to penalty if you fail to meet the goals? And that's been kind of a sword hanging over everybody's neck for a number of years now.

And there was some real discussion as to whether this ought to be an aspirational goal or, you know, this is a mandated goal and potential penalties. And particularly if you're looking at goals where a utility may underperform and suffer a penalty, I think the utilities are going to be reluctant to adopt something that has a banded approach of that nature.

So, you know, it may play in some measure or context in a larger policy issue as to, you know, what the purpose of the goals are and the expectation of achieving them. Having said that, I mean, a banded approach low/high is not something that is completely foreign to utilities, and, you know,

sensitivity analyses are something that they are accustomed to running.

On the other hand, you could take what is already a very complex goal-setting process, doing achievable potential -- technical potential and achievable potential, and if you add a series of sensitivities you could create the work load to a point where it just becomes unmanageable. So you've got to balance all those considerations in.

MR. FUTRELL: Gary, to follow up on this line of questioning, this idea of a banded approach to looking at cost-effectiveness. Could you give us some quick background on when in your presentation you identified that you looked at measures that passed RIM above a .75 level. Can you give us some background on how that number was arrived at and what exactly that -- what comfort that gave you by setting that level.

(Inaudible, electronic noise.)

MR. BRINKWORTH: All right. Let's try that. Sure. The .75 level, we got that from looking at -- in the initial screening, kind of traditional RIM screening that we did at the very beginning of our analysis, it obviously showed us how all those programs stacked up, and we looked at the amount of lost revenues from those various programs. And using that number, that's kind of how we backed into the .75, because we actually talked to our commission and said are you willing to accept

some level -- this kind of goes back to that question you were asking before about is there a level of tolerance -- can you tolerate a certain amount of lost revenue?

And when we discussed that with our commission, they said, yeah, we can accept something in between here and here. And they gave us a dollar range for lost revenues. And we took that and went back, basically, and looked in our early results and said, okay, so what if we -- that correlates to something right around this .75 ratio, for the most part, on RIM scores. And so that's where we came up with that value.

So we said it has still got to make sense to the customers, so it has to pass the participant test, it has to pass TRC, so for the whole body of ratepayers in the service territory it's got to make sense. And then we're willing to accept a certain level of lost revenue that correlated to this RIM score ratio that was less than 1.0.

Now, unfortunately, it didn't generate a bunch of measures for us, but that was kind of the logic, was we walked into that place of saying there's a certain amount of revenue loss we are willing to accept, or kind of said a different way, the way some of my commissioners put it is we're willing to ask non-participants to take a certain amount of cost penalty in order to be able to offer a bigger portfolio to the greater body of ratepayers.

MR. FUTRELL: Okay. Let's move on to our next

question that kind of feeds into the next question that Karen has got for us.

MS. WEBB: My question takes us back to some of the formal presentations. We heard three, maybe four speakers mention specific measures that would be excluded by the RIM test. I can go into those if you would like, but I'd like to hear any feedback, if I could, on any specific measures particularly the utilities know of that would not pass the RIM test that might pass, say, the total resource cost test.

MS. CLARK: You know, I don't -- it strikes me you would have to do the -- I don't know that we could say just off-the-cuff. I think you would have to do some analysis.

UNIDENTIFIED SPEAKER: I think maybe a better way to address it is we've got the presentation that was given at the last workshop where there was a comprehensive list of all the measures that the utilities did have that passed RIM. I think, you know, we feel confident those pass RIM as opposed to which ones do not. So that might be a good source to look at.

MS. WEBB: Of those that did pass?

UNIDENTIFIED SPEAKER: Right.

MS. WEBB: But I suppose all the environmental representatives have -- well, Mr. Krasowski is here, and I don't know if the ones that formally presented this morning are here, but some talk was given as to programs that would flunk RIM, such as free programs would not pass the RIM test, the

refrigerator recycling program would not pass the RIM test, and, I believe, growth control programs were said to not pass the RIM test. Is there anyone still in attendance that can speak to those or other measures that might not pass the RIM test?

MR. BRANDT: Just in general, also -- this is Dennis Brandt for FPL, I'm sorry. You know, it's not like a measure flunks the RIM test or passes. It all depends on the individual utility, how they choose to administer the program, so there is lots of variables. So I'm not sure there is this category that says, pass RIM, fail RIM and we can use that cart blanche across the board. (Inaudible, electronic noise.) I mean, just because something passes in GRU doesn't mean it's going to pass FPL, vice versa. So I would like to, I guess summarize. I don't see that there is a list that says for everybody this is what passes RIM, and this is everything that passes TRC.

UNIDENTIFIED SPEAKER: But I think this illustrates probably a larger point that she needed to give some consideration to. It is very hard to answer that type of a question without performing an underlying analysis where you've done comparable portfolios under different tests. And just as it's difficult to answer that, I think it's very difficult for the Commission to make a meaningful decision about potentially changing its approach to cost-effectiveness without having that

kind of analysis performed so that it knows actually what the potential impact is, both in terms of measures and savings and rates.

So trying to address cost-effectiveness outside that context is really missing a significant body of information that would be valuable to a decision-maker, to the policymaker, which would suggest that making this decision now as opposed to trying to do it in the context of a goals proceeding where you have a great deal more informed -- a great deal more information so that you can make informed decision-making suggests that you really ought to defer that decision to when you have the data as opposed to now when you're trying to make the decision in the abstract.

MR. KRASOWSKI: Excuse me, Mark. I must say that I agree with the gentleman from FP&L, and that's why no new utilities' energy producing projects should be approved until all of the efficiency and renewable, but we're talking efficiency today, efficiency opportunities have been analyzed and measured and are thoroughly understood so that we can know where we are. We're approving things here in Florida that might not be justified or needed.

Thank you.

MR. FUTRELL: Okay. We have one more question from staff. Ms. Chase.

MS. CHASE: Joanne Chase with the PSC staff.

The last question that we have has to do with programs that have been found to be -- that it has been decided that should be funded by the participants only. I think we heard some examples today when the companies were talking about some things that are discovered maybe during an energy audit, suggestions made that don't really rise to the level of a program that should be part of the DSM portfolio or anything.

And my question is how do we maximize the potential benefits of these types of things? I mean, are these the kinds of things that are put into a utility's educational program or informational -- how does that information get to more than just that one customer?

MS. CLARK: You know, it's a matter of making it clear when you do the audit that these things can be done and continuing contact with them so they understand that. And I would add that, you know, one of the things I've heard in the Energy Commission is there needs to be more public education --

MS. CHASE: Right.

MS. CLARK: -- and public outreach on that, and there has been some suggestion that it is a state responsibility to assist in that, to provide that education and urge people to implement those things that will benefit them and do it on their own.

MS. CHASE: Well, does each utility now, do you all have your own programs such as that, the education for the

consumer on conservation or whatever, or do you pool your resources and maybe have a statewide effort? Is there any thought given to that?

MS. CLARK: I'll ask in a minute about the statewide effort, but they do have TV spots, radio spots, that to some extent need to be tailored to each company, because there are different programs that work for each company. I know Gulf Power has the one where the appliance calls up the owner of the house and asks if he can go to sleep. And Tampa Electric has one with a local personality known -- I guess he was a Buccaneer, right -- who urges people to do that. And FP&L had one designed to address commercial customers. And I'm just trying to think what Progress' was. Oh, the guy who dressed up as a light bulb, PFL.

MS. CHASE: Yeah.

MS. CLARK: But I think -- in a minute I'll speak to the statewide, but I think for each utility they are sensitive to what works with their customers and to pair them up with other programs so that they can maximize the effect of them.

UNIDENTIFIED SPEAKER: But, I guess, you know, if the benefits of the -- I guess the utilities have a role here, but I think there's other people that have a role. And I think to the extent that, you know, the state has a role to help educate consumers, too, we don't think they are a replacement for one or the other. They are actually complementary. And the more

people that hear about this stuff, the more likely it is that it finally sinks in and stuff actually happens.

MS. CLARK: I know awhile back the Commission did some that I thought were effective. I never appeared in them, but I thought they were effective.

MR. KRASOWSKI: Excuse me, Mark. Again, a quick question.

Why is it in Florida that the utilities are given the control of the demand-side management programs? I understand in other states, and I think in California, there is a general fund that all ratepayers pay into, and then I -- I'm not sure. I'd like to understand. Maybe somebody can answer that. Then that money is used to advance efficiency programs.

Is it the Legislature that set that rule that the utilities would carry this off? Why don't we have a separate entity to do that?

MR. FUTRELL: The Legislature decided in 1980 that the utilities would essentially be the agents to deliver energy efficiency programs to the customers.

MR. KRASOWSKI: Okay.

MR. FUTRELL: Initially, the legislation applied to all utilities, and there was and has been an energy office that has had varying levels of funding and activity throughout the -- since the late '70s, and that has been the state level approach to providing energy efficiency information and

funding.

MR. KRASOWSKI: Are you familiar with the California method as far as the fund that's under --

MR. FUTRELL: I know they have a public benefits fund.

MR. KRASOWSKI: Yes.

MR. FUTRELL: And that has been advocated here by some folks in the Energy Commission that have advocated looking at that concept for the state.

MR. TRAPP: Let us also mention that, you know, it's not just a utility thing. Different agencies have held the energy office, who at one time had oil refund monies to expend. There are still programs being administered, although not as well-funded, through the energy office. There is also programs with respect to the building code at the state level and at local levels. And there has also been action in Florida with regard to appliance efficiencies. So, you know, I think that the state legislature and the Governor have all formulated our energy policy in Florida to -- again, not just utilities, but tried to address all the aspects. And I think they're meeting today on this topic matter. But our role, the PSC's role is to find in Chapter 366, the Florida Energy Efficiency Conservation Act, and it has specific guidelines which we must follow. It is also the subject of debate today over in the Legislature.

UNIDENTIFIED SPEAKER: Just really quick, Mark.

There is the question about California and how we fund in California efficiency programs. It's actually a combination. So there is a public goods charge on everybody's bill, but there is also procurement money from the utilities, and it's a mix of both.

MR. GUYTON: And while it's not a matter of public policy, it shouldn't be forgotten there are energy service companies out there that have entered the market because there's an economic advantage and incentive for these private entities to provide these services, as well. So there are also, unlike back in 1980 when FEECA was passed, there are those entities as well that are promoting some things on behalf of customers that are not constrained by the cost-effectiveness tests that we're talking about today.

MR. FUTRELL: Okay. Does anyone have any closing remarks they would like to make before we adjourn?

Any members of the public want to make a comment? Yon.

MR. BRANDT: Thank you. Yon Brandt (phonetic), Advanced Green Technologies. It's unusual of me to actually listen most of the day and not speak at all. I think one of the things we've done here today is we actually skipped over the goal question. And I think it's a little tough to decide which calculators work for what if we haven't really decided what we want to accomplish.

The main thing I keep hearing is participants, non-participants. I think the goal of everyone in the room is to make all non-participants, to make them participants and to figure out how to make, you know, as many of them get involved in some sort of energy efficiency.

We really want to reduce energy consumption. You know, conserve and then reduce. And I don't know how renewable energy plays into it, or, you know, the renewable energy incentives, but I think they did definitely play a vital role, depending on what -- you know, obviously, there is a question of base load and off-duty cycling and other things of that nature. But I definitely think that, you know, to find a goal specifically on what the Commission wants to do, what the utilities want and can do, and what the public is willing to do. I really was in Tallahassee to find, you know, what the payback was for the adoption curve, you know. And I think different technologies will also have different payback. And that's where, you know, the calculations will come in. But, you know, the overall state goal should be on getting all non-participants to participate, and those that are participating, to get them to participate even more.

MS. CLARK: Mark.

MR. FUTRELL: Yes.

MS. CLARK: This is Susan. I guess I do. It's sort of to articulate a little bit on what Mr. Yon just said, and

that is that -- I think I've forgotten your name -- that's your first name. Excuse me.

You know, I think it is important to have clearly articulated policies that you are wanting to achieve. But what I hear today, and I think it has been clear by the discussion that these are all things that have to be considered as part of a goals-setting process. And as you move through that process, all these issues are things that can only be resolved after you've had a thorough analysis.

And I think as I understand what you are addressing through doing a potential study and the steps you intend to take, that you will be doing that thorough analysis. And I think the focus needs to remain to be on customers. What are the impacts to the customers. And that should be the focus as you go through this process.

Thank you.

MR. BRANDT: If I could just add one more thing.

MR. FUTRELL: Yes.

MR. BRANDT: Yon Brandt, again. You know, it is about the impact to the customers that's important, but let's not just think about the short term or the financial impact to them. Let's also think on the environmental impact to them and the environment around them. And, you know, the fifth question on the round table discussion was non-economic benefits and the societal benefits in terms of including that.

You know, a lot of utilities have had great success with pilot projects, incentivize energy efficiency and renewable energy incentives. I mean, that's why the federal government put that off in the same department, it's the Office of Energy Efficiency and Renewable Energy.

You know, and let's -- I think with that is to figure out how to get it to work not only on a -- to increase the portfolio of renewable energy on, you know, low fuel cost production, like solar and wind, like the Governor has been emphasizing. And how to get them to reduce that and get them more involved in energy conservation. But we really have to look at the societal benefit, as well, not just the financial impact.

MR. KRASOWSKI: Mark, may I? Thank you.

As a resident ratepayer and citizen of Florida, I've been living here like 28 years now and stuff, I see the need for energy, and I see opportunities to provide for that need. But there seems to be a disconnect between evaluating our options on an equal plain. Like the discussion that -- or the idea that we're going to proceed with spending from 12 to $16 billion on one form of energy plant without a comprehensive evaluation of what we could get over the next ten years, which is the time before that project would start producing, with that 12 to $16 billion in terms of energy efficiency doesn't seem to represent adequate analysis to me. And that's just as

a common person ratepayer.

I certainly appreciate that it is a very complicated issue, and there is a lot of smart people working on it, but it seems that what should be in the best of worlds, the ideal world something crying out for solution is prevented from realizing the solution because of politics and the economics of the special interests that are already involved in the process.

It's almost like you're trying to remodel a house when you're living in it as opposed to starting from scratch and building a new house. But, you know, I wish you the best of luck, because it impacts me, and, again, I have an interest in this. But I just think a lot of effort has to be made in making sure we have all the information we need and all the comparisons can be done before we move forward on one thing or another. So thanks for the opportunity for speaking up.

MR. FUTRELL: Thanks, Bob.

Okay. We will close the proceedings today and thank you for joining us. As Judy mentioned earlier, there will be a transcript that we will make available on or after May 12th. We will distribute that to everyone on our contacts list. We would request that if you would like, please feel free to provide written comments, and use the topics that she outlined as a template. Feel free to go off into other topics if you would like. And we would like to see those by May 21st.

And, also, we'll have a follow-up workshop on May

30th where we will discuss incentives for demand and supply-side efficiency measures. You will be getting the notice information on that shortly.

Thank you very much. Have a nice weekend.

(Whereupon, the workshop was adjourned.)

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STATE OF FLORIDA)

: CERTIFICATE OF REPORTER

COUNTY OF LEON)

I, JANE FAUROT, RPR, Chief, Hearing Reporter Services Section, FPSC Division of Commission Clerk, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 12th day of May, 2008.

JANE FAUROT, RPR
Official FPSC Hearings Reporter
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IN RE: DOCKET NO. UNDOCKETED STAFF WORKSHOP
NAME:
DATE: April 25, 2008

PAGE	LINE	CHANGE
128	19	Changed Dennis Rowe to Dennis Brandt
174	15	Changed Dennis Rowe to Dennis Brandt
198	6	Changed Dennis Rowe to Dennis Brandt
210	7	Changed Dennis Rowe to Dennis Brandt