ORANGE COUNTY CLEANTECH SYMPOSIUM

"Creation of a Renewable Energy Portfolio Standard"

Thursday, February 18, 2010
8:00 a.m. - 12:18 p.m.

UCF Executive Development Center
36 West Pine Street
Orlando, Florida

Reported by
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Orange County Cleantech Symposium

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AGENDA

Special guest speaker at closing of the Symposium — Florida Governor Charlie Christ

8AM-8:15AM: Orange County Introduction/Welcome (John Lewis/Kirstie Chadwick)

8:15AM-8:45AM: State of the Union for Florida's RPS policy (Tommy Boroughs)

8:45AM-9:15AM: Programs in Action – Benefits of RPS to Florida (Dr. Jim Fenton)

9:15AM-9:30AM: Networking Break

9:30AM-10AM: Utility Perspective (Jennifer Szaro, Orlando Utilities Commission)

10AM-10:30AM: Builder/Developer Perspectives – Panel Discussion

Moderator: Robyn Dowsey, Wharton Smith, Inc.
Panelists:

- David Bessette, All Solar Florida
- Kimberly Krutski, Blue-chip Energy
- Christopher Maingot, Superior Solar

10:00AM-10:30AM: Michael Dobson – Where Should FL go from here on RPS?

10:30AM-11:00AM: Case Studies of RPS Policy in Other States – Good & Bad (George Cavros)

11AM-11:30AM: Open Forum to Share RPS Ideas and Closing Remarks (John Lewis)

Next meeting – April – date to be announced

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P R O C E E D I N G S

MS. CHADWICK: First of all, thanks, everybody, for coming today, and for those of you who don't know what's going on, this is Orange County TV, so this is getting recorded and it will be put online as part of Orange County's initiatives here in the Cleantech sector and what not.

My name is Kirstie Chadwick. I am the director of venture development for the entity called the Venture Lab out at UCF, and the Venture Lab is an agency that helps technology start ups here in the Central Florida region with business development and finding capital and things like that, so we're just a group of folks that are here to help those of you that have small technology businesses in Central Florida. And Cleantech is, obviously, a hot sector in the world of venture capital and things like that, and so our specific focus is in that type of sector with that type of a company. But, today, I'm here as a facilitator of this event, but it's actually Orange County who is -- who we should be thanking for putting all of this together today. And I'm going to introduce that gentleman that just ran out the door as our first speaker.

This is John Lewis. John Lewis is the economic development administrator for Orange County. He's here

representing Mayor Crotty and this whole series of symposiums and Cleantech studies and what not that have been going on which you'll learn about today if you don't already know what that is, our -- Mayor Crotty's initiative towards trying to promote Cleantech as an economic development initiative here in Central Florida, and John is the gentleman that behind the scenes is doing a lot of the operational economic development activities on behalf of Mayor Crotty. So with that, I'd like to introduce John Lewis to kick us off here this morning.

MR. LEWIS: Thank you, Kirstie. I'm told that we need to stand behind the podium today, we can't walk around or it makes it difficult for Orange TV, so I'm going to try to stand still like my father used to tell me 45 years ago.

Mayor Crotty would have been here this morning, he had a previous commitment and can't be here. He's been here with us before, and so I think you all know that Mayor Crotty supports these initiatives and he certainly will follow up and look at the videos and the transcripts and we'll talk about what happened today after today.

All of this started back in -- on October the 23rd, 2008 when Mayor Crotty announced his two-pronged

Cleantech initiative. The first one was to come up with a study on Cleantech. What our assets are, what our possibilities are for growing Cleantech, our potential, just the presence of Cleantech in the community at the present time. We didn't have anything like this at the time, although Cleantech was the buzz word in economic development from San Diego to San Jose to Austin to Boston and Dallas. So we felt we really needed to get up to speed on this and get our fair share of Cleantech growth.

As you can see, the study has been done, it's been released. We had three Cleantech symposiums last year that all provided input into this study. Many of you participated in that, and already 2,000 copies of the study have been distributed. The purpose today is to start the process of furthering discussions on all of the specific recommendations in the Cleantech study, starting with a renewable energy portfolio standard, the goal that we would like to see implemented in Florida.

We've already taken steps, though, to make sure that implementation moves along. A week after this study was released, the Orange County Board of County Commissioners unanimously incorporated all 17 recommendations into their legislative priorities.

Following up on that, two weeks ago, I sent a

personalized letter specifically mentioning RPS and a copy of the Cleantech study to every single state senator and representative. So, hopefully, that will reach some of the places where it needs to be. Sandy Shugard, Dr. Shugard from Valencia, has agreed to chair a green committee, and we're organizing for that and we'll be starting that shortly. You'll be hearing more about that. But the Mayor has also directed our building department to come up with a strategy and a process for enacting comprehensive green building codes and ordinances in Orange County. They've been working on this for a couple of months, having meetings, figuring out how they can do this within the framework of state building codes and so forth, and they're going to be presenting where they are at our next Cleantech symposium, and we'll have another line up of stellar speakers just as we have today.

I wanted to -- I looked through the list of people here today, and I wanted to go through the list and try to pick out 10 people who would represent the diversity of this group and realized that that's going to add another 10 minutes and that would take another 10 minutes away from our speakers. So I'll encourage everybody to say hello to each other during the breaks and during the networking opportunities here this

morning.

First, I want to say thank you, especially to our sponsors and our partners, because, without them, we wouldn't be having any of these symposiums, we wouldn't have been able to complete the Cleantech study. And the first organization I'd like to thank is the Florida Solar Energy Center. Dr. Jim Fenton has been a speaker. I think this is the third time he will have spoken at one of the symposiums. So the Florida Solar Energy Center is one of our most important partners.

TechAmerica. How many ever heard of TechAmerica? Formerly AEA. I think we've all heard of AEA, technology's largest industry advocacy organization. They assisted us with the registration process and a lot of other things related to the symposiums and the study.

The Metro Orlando EDC. They help us identify Cleantech companies, reach out to Cleantech companies, and they developed a section on Cleantech on their website. I encourage you to go look at that. The EDC has a tremendous amount of very substantive information on its website.

Mitsubishi Power Systems, one of our largest Cleantech companies in Metro Orlando. We tend to think of Cleantech companies as being emerging companies and start ups. Well, two of our largest employers in

Orlando are Cleantech companies, Mitsubishi Power Systems and Siemens Energy. And Mitsubishi has been very helpful in supporting the expenses that are associated with these symposiums.

As well as AquaFiber, Cleantech Solutions from Biology, and Tom Bland. They've been very supportive in terms of helping us be able to provide the financial wherewithal to conduct these symposiums.

The Institute for Economic Competitiveness at UCF. This actually was a cornerstone -- establishing this was the cornerstone of Mayor Crotty's economic stimulus package in 2002, and it has gone on to achieve great things under the leadership of Dr. Sean Snaith, and they're the ones that completed the Cleantech study. I just saw last night, this is a complete redo of their website, so you may not recognize it.

Of course, the UCF Venture Lab and Kirstie Chadwick. They're the ones that are organizing this whole thing, and I think a lot of thanks to Kirstie and Christa Santos and Sean Christensen and everyone that's involved with the Venture Lab. I think they're working with six Cleantech companies right now. There's a tremendous amount of resource on this website, so I encourage you to go visit that when you can.

And in a larger context all of UCF, really is our

partner, not just the Venture Lab and the Institute for Economic Competitiveness. It's the technology incubator, the expanded programs at UCF Small Business Development Center, and a host of programs, and you can go into UCFopportunity.com and you'll see a whole list of all the programs at UCF that are related to economic development. And as you can tell by the particular screen capture that I took off the UCF website, Orange County and UCF are great partners in economic development.

Of course, Orange TV. They have videotaped every one of our symposiums, every presentation, all the discussions, they've integrated in with the Powerpoints from the symposiums, and every one of those symposiums and content is on the UCF Venture Lab website.

And Leslie with Zacco & Associates, she's here this morning and she's taking a word for word transcription of the whole symposium. So in addition to full video of all the presentations, you'll have a full word for word document of the entire symposium, as we have with the first three symposiums. So much thanks is due to Orange TV.

And, of course, the University of Central Florida and its Downtown Center where we've been having these symposiums, an ideal place and setting for this event.

I want to make two announcements of events coming up. One is on March the 2nd where Ford will introduce its first plug in vehicle in Florida, only the second in the United States. So there's the website there. I'll give you a minute to write that down where you can go in and find some more information about it, but from what I understand from the press releases, you'll be able to go out and actually test drive the plug in vehicle if you have a mind to. Looks like an exciting day.

Then coming up on April the 14th is the Annual Senior Design Symposium for Renewable and Sustainable Energy. That's where undergraduate students at UCF showcase their research, innovation and creativity in the area of clean energy.

I want to -- before we move on to the speakers and the content of the day, I want to mention two handouts that you have in front of you, I think that you've picked up at the front door. One is a status report on energy bills. I asked the legislative people in Orange County if they could do a quick status report for me yesterday on what bills were being prepared, ready to be introduced, and something about them. This is a summary of those bills. I was surprised to read through here and see that there are some things that if we want an RPS we need to support, but there are a few bills that

if you want a RPS, you'd better not support them. So a few of those stood out as well.

The other thing that was handed out when you came in is a feedback form from today. The results of the feedback form that we had when we released the Cleantech study is also out there and I think you'll find that interesting. There's a lot of detail to it. We only asked one question, rank the 17 recommendations in order of priority. Pick five, which ones you think are most important for consideration at a Cleantech symposium. Out of that one question, I got seven or eight pages of graphs and charts. But the RPS came clearly out as the top idea, the top topic that everyone at our symposiums wanted to talk about today. But there is one question on here about today's symposium. We'd like to know from each of you what you think the three most important actions are that symposium participants can take to achieve the goal of an RPS in Florida. It's not going to be just Orange County or UCF or the Florida Energy Center who's going to make this happen. It's got to be everyone in this room doing something. And then looking forward to a nice Cleantech symposium in April, we don't have a specific date yet, it's going to be on green building codes and ordinances. Here's a couple of questions to kind of just get us thinking about this.

So I'd like you to respond to that as you're thinking through the material this morning.

And, finally, of course, at the bottom, if your company or organization would like to help sponsor the symposiums, we would deeply appreciate it. So you might think about that and we can add you to the roster of sponsors at the next symposium.

As we move ahead today, as I was watching the Olympics last night and Shaun White is his name, fantastic, tried to think of a couple watch words that maybe we can think about as we hear all the presentations today. If we really want to establish an RPS in Florida, seems to me that we ought to be asking ourselves what's reasonable. Is it 20 percent by 2020? 15 percent? What's included in an RPS? How do we make it specific to Florida? And how do you answer the question of cost? So there's a couple things that might give you some guidance, and just try to think about these as the presentations are made. Our goal, of course, is to enact an RPS in Florida. There's a -- sort of to set the global stage for this symposium, I just want to end my introductory remarks with a quote from an article that is coming out in next month's issue of SFO magazine. That stands for Stocks, Futures and Options magazine. It's just sfo.mag on the Internet.

And there is an article coming out in next month's issue titled, Cleantech, How China Sizzles and the U.S. Diddles. There's just a couple of sentences from it.

As the United States continues to be polarized around the Cleantech policy, diddling with implementation of things like a federal renewable energy standard, the Chinese have quietly leapt to the leadership position in the industry. In 2006, they passed RPS renewables to comprise 15 percent of their energy mix by 2020. They're going to reach that capacity of 20 percent by 2020. And they'll meet their 2020 solar goal by next year. So they're moving forward. This article describes how China wants to be dominant in the Cleantech industry. They want to have a laser-like focus on Cleantech. Watch for this article because I think it does sort of provide the framework within which we have got to get going.

So one of the basic underlying questions that we need to ask ourselves today is how do we sizzle in Metro Orlando and not diddle.

So with that, I'll just welcome -- this is a record attendance today. I think we're going to end up having about 85 or 90 people. That's the number of people who registered. And we're going to continue these symposiums, and hopefully we hit some home runs.

Someone e-mailed me a day or two ago and asked me, how are you going to measure success from the symposium today. And the way I would measure it is if Florida passes an RPS. So I don't want to have egg on my face going through all this, so I don't think anybody else does either. We don't want to diddle in terms of doing what we need to do to be competitive, not just in China but other states. Over half the states in the United States have passed renewable energy goals. When we meet with companies who want to build a PV manufacturing facility here, these days, in the same breath they ask about incentives, they ask what kind of clean energy policies do you have in Florida to support the growth of Cleantech? Do you have an RPS? Well, we're working on that, but meanwhile we're doing this, and we point to all the great resources that support Cleantech in Metro Orlando. But it would sure help in drawing companies to Metro Orlando and Florida if we had an RPS of some type. Over, I think, 30 states, 35 states have mandatory RPS's. Some have voluntary. But I think the bottom line is that they all compromised, they all came up with something. In Dallas, there is something like I-4 called Central Expressway, and over the decades, there was talk about renovating it and putting it underground, widening it, elevating it. When we surveyed citizens

and did focus groups, the bottom line there was, we don't care what you do with it, just fix it. So I think the message to the legislature is, let's do something. Doing nothing leaves us out of the race.

Thanks a lot. Hope you enjoy today. Kirstie?

MS. CHADWICK: Okay. I have the honor of introducing the speakers throughout the day, and it's an incredible group of folks that have come together here to help educate all of us on RPS best practices, both here, I guess, in our -- well, we don't have a lot going on yet in our state, but we'll get there, but also at the national level. As a reminder, the speakers do need to stand, not sit, behind the podium here so that the TV cameras can record all of your wonderful faces and also catch your voices on the microphone.

So our first speaker for today is Tommy Boroughs, and Tommy is with the law firm, Holland and Knight. And we'll excuse him for his lawyerish background because he also is a wonderful expert on the renewable energy domain as well. Tommy is -- his practice in law is focused on the area of zoning and land use, regulatory matters and -- together with real estate development, acquisition and sales. He also currently serves as the co-chair of the firm's land use team. In addition, Mr. Boroughs served as the Chair of the Florida Energy

Commission from 2006 to 2008 and he served on the board of the Orlando Utilities Commission from 2001 through 2008. He also chaired the American Public Power Association's Policy Makers Council in 2005 and 2006, and he served as a member of the Board of Directors of that association as well. In December of 2005, former Governor Jeb Bush appointed Mr. Boroughs to the Florida Energy Forum, and in 2007, Florida Governor Charlie Crist appointed Mr. Boroughs to the Governor's Energy and Climate Action Team. Mr. Boroughs was also voted 2006 municipal electrical member of the year. So as you can see, in addition to his side job as a lawyer, he's very, very well entrenched with the alternative energy policy. So with that, I'd like to introduce Mr. Boroughs to open our day and give us the broad scope on the state of the union of RPS.

MR. BOROUGHS: Technical expert has got to set up the technically challenged for this presentation here. Thank you.

Good morning, everybody. It's great to be here. I hope this is one of the last of the cold mornings we're going to have this year. At least, I've got my fingers crossed. Before -- rather, after my presentation, I'll leave plenty of time for questions and comments and discussion if we want to do that.

Before I get started with the RPS history and the present status of the RPS policy in Florida, let's make sure we're all on the same page in terms of a definition of renewable portfolio standard. A renewable portfolio standard is a requirement that power generating utilities produce more energy from renewable sources. It generally establishes a minimum level of electricity sales that must come from a renewable generation -- must come from renewable generation by a specific date, like a certain percent by this date, certain percent by another date. Okay. Why do we have one? What are the justifications for having a renewable portfolio standard? First, you know --

I'm sorry, I'm still under definition of renewable energy. Did I do something wrong? No. I'm still on the definition for renewable energy now. Sorry. I got ahead of where I am in my outline.

But renewable energy means energy produced from a method that uses one or more of the following sources of the following fuels or energy sources: Biomass, solar energy, geothermal energy, wind energy, ocean energy, hydroelectric energy. Basically, renewable energy is energy from a source that continually replenishes itself.

Okay. What's the definition of biomass? Let's

talk about biomass. Well, Florida -- this is a statutory definition of biomass in Florida. It's very broad as you can see. And it covers not only, you know, everything from agricultural products to agricultural waste, including plant and animal, it also covers such things as municipal solid waste and urban wood waste. Now I get to the reasons for why we have an RPS. One reason is to reduce the carbon emissions in our generation to renewable sources which generate less or emit less carbon. But also renewable energy emits less other pollutants such as sulphur oxide, nitrous oxide and mercury. Also -- and this is one of my favorites -- it reduces dependence upon foreign fossil fuel sources. In Florida, that's especially important because in Florida we import 98 percent of the fuel for our energy. Just think of it, folks. 98 percent of the fuel for our energy in Florida is imported. We ship all that money out of our state. Now, why is a -- if I can get to my next one here. it's not shifting here, Kirstie. What am I doing here wrong?

MS. CHADWICK: Hit next.

MR. BOROUGHS: Okay. That ought to work. Now, why is an RPS especially important to Florida? I told you one reason about we import all of our energy. But Florida has a vast potential for renewable energy.

Florida could be literally the Saudi Arabia of biomass. Look at what we've got just from our so called opportunity fuels, just from our waste fuels. We got timber waste, agricultural waste, lawn clippings, land fill waste, animal waste, food processing waste, and we can grow crops. We've got the land, we've got the climate, we've got the rainfall. In addition, we've got good solar, we've got good potential from the Gulfstream. The Gulfstream that whips around Florida off the southeast coast is the fastest moving body of water around the continental United States. And we've got a potential of offshore wind. Notice I don't mention onshore wind because it's basically just shore wind. At least with the technology today and people on the coast just -- in our country, just -- in our state, just don't want to see turbines or windmills, you know, blocking their view of the ocean. The Europeans are a little bit different. They think of things differently. I know a lot of you have been to Europe and you've seen these turbines. Europeans think more of the common good, in a certain sense. Americans, we tend -- and I speak in exaggerations and I'll acknowledge that, but Americans tend to think more of our individual rights. We don't want to be -- we don't want our view of the ocean, you know, to be blocked by a turbine or a

windmill. So it's going to be tougher to have anything other than offshore winds. And that's -- I list that as a potential because that's out there. You can do it, you can do it now. It's very expensive to do it with the technology we have now. Eventually, though, we'll probably do better than that.

Okay. Now I'm getting ahead of myself. Let's talk for a minute about the history of an RPS policy in Florida. In 2006, the Florida legislature created an entity called the Florida Energy Commission. Okay. There were nine of us appointed by the president of the Florida Senate and the Speaker of the Florida House, and the purpose of the Commission, the purpose of the Commission was to advise the Florida legislature on the future -- on a future energy policy for the state of Florida. I served as chairman. We had -- in addition to the nine commission members, we had four advisory groups. Each of our four advisory groups were chaired by a member of the Commission but they were staffed by as many as 15 or 20 members of the public, members of the public representing all the various vested interest groups that had a vested interest in a Florida renewable policy. You know, utilities, customers, businesses, government, environmentalists, academia. And at the end of that year -- we had hearings all over Florida, not

just our full commission, but also the four advisory groups. The end of that year, we came up with a set of recommendations. I've got it here with me. It's about the same size book as that Cleantech study that all of you have there at your -- that you were given when you walked in, that Orange County did, that Cleantech study, that green book. About that size. And that was one volume. Volume 2 is more specific with the actual -- the language of the specific legislation we wanted. But we made 85 separate recommendations to the Florida legislature in our December 31, 2007 report that would be the backbone of the beginning of an energy policy for the future of Florida. One of our four advisor groups I've told you about was focused on renewable energy, and we had several recommendations in the renewable energy area. One of them -- well, let's give you an example. We recommended the legislature direct the Public Service Commission to study renewable energy in Florida, to look at all the various sources, and after that study, to recommend a renewable -- come up with a recommendation for a renewable energy policy for the state of Florida. Okay. It was our recommendation No. 40. That was it. Okay. Come up with an RPS for the state of Florida. Well, the 2008 legislature said it did something, the House did nothing. What did the Senate do? This is the

bill the Senate passed. Okay. The Senate said, okay, Commission, Public Service Commission, adopt rules for a renewable portfolio standard. Okay. And in doing that, consult with the DEP, Department of Environmental Protection of Florida Energy and Climate Commission, and have a report, have a draft rule for consideration of legislature by February 1, 2009.

All right. Let's look at some of the component parts. I keep hitting this thing. I got to redo it here. Let's look at some of the component parts of that. Let me backup just a minute. So the Public Service Commission hired a consulting firm called Navigant Consulting, one of the top consulting firms in the country, to do the study. And I've got some excerpts here of the docket of the -- of a public meeting of the Florida Public Service Commission of December 31, 2008, at which Navigant made the summary. They had already published their report and the staff had already published its recommendations, but these are some excerpts, okay, from the recommendations of Navigant. Okay. Here's what Navigant said.

No. 1, under the unfavorable scenario for renewable development, which includes a 1 percent rate cap, renewable energy in Florida could be 5 percent of IOU retail sales by 2020.

Well, what do they mean by unfavorable scenario? What they're talking about is -- what they're talking about is they're referring to their -- the price of fossil fuel. Okay. The existence and the amount of any governmental renewable incentives. Such things as the viability of a market for financing renewable energy. And under the most unfavorable scenario, you could only do about 20, 25 percent. Under the mid favorable scenario which had a 2 percent rate cap -- now, the unfavorable scenario had a 5 percent. I'm sorry, that was -- I'm sorry, that's a 1 percent rate cap. The rate cap means -- the 1 percent rate cap means the percentage of total retail electric sales a utility has. For example, if their total retail sales is a hundred million dollars, 1 percent is 1 million. So that's all that company would have to spend in, you know, the following year is 1 million dollars in order to meet the RPS goal. So that's why it's referred to, our first bullet there, as an unfavorable scenario. It only gets to be 5 percent, okay, 2020. You get a 2 percent rate cap and a little better and more expensive fossil fuel cost from governmental renewable portfolio and renewable energy incentives, and a 2 percent rate cap, and you can do 11 percent by 2020. Under the most favorable scenario, which includes a 5 percent rate cap, you could

do 25 percent by 2020. Okay. So, all right, here is what they recommend. This is what Navigant recommended and this is what the staff recommended. By January 1, 2017, 6 percent. Da da da, da da da, da da da. We don't get to 20 percent to January 1, 2041. Okay. So that's what they recommended. Well, that was on a December 31, 2008 meeting, formal adoption of a recommendation of an RPS in Florida of 20 percent by 2041. Wait a minute, says Governor Charlie Crist. He said, what do you mean 20 percent by 2041? Didn't you read my executive order? He issued a set of three executive orders dealing with renewable energy in the summer of 2007. One of his executive orders, he asked the Public Service Commission to prepare a rule providing for -- getting an RPS of 20 percent by 2020. He said, didn't you see where I asked for 20 percent by 2020, and you come back with 20 percent by 2040? Now, I don't know this for a fact but I just would speculate, he had some of his minions go talk to the Public Service Commission guys. Do you realize who appoints you? Do you realize who reappoints you? I need it to be 20 by 2020. Now, lo and behold, guess what, da da da, January 9, 2009, action of Florida Public Service Commission. voila, 20 percent by 2020. Nine days later, wow, man, they get the message. The Governor wants 20 percent by

2020, the Governor's going to get 20 percent by 2020. But let's look at the components of the rule, because it really -- it's the components of the rule that make the difference on the ground, make the difference in reality. Here's what they said. This is -- I'm sorry, this is a schedule. I've already hit that. No, that's the schedule. This is the way it works with you. Here's some other components. Okay. Now, here's the concept. IOUs could do one of two things. They could either self build their own renewable energy or they could buy what's called RECs, renewable energy credits. They could buy them from one utility who had more renewable energy than it was required to and it would get so-called REC credits for that. It could sell them. Okay? It could sell them to utilities. But one way or the other, you had to make your RPS standard. Okay. However, there's a rate cap. The rate cap was 2 percent. I want to go back to my hundred million dollar analogy. Okay. 2 percent of a hundred million dollars is 2 million dollars. So what that means is, okay, all that one particular utility would have to spend to get -- to make that RPS standard in any one year would be 2 million dollars. Now, it provided for a review every -- once every three years and it made the standards mandatory. Okay. It's mandatory unless, you know, you

hit your 2 percent. In other words, you have to do it. You have to hit your 2 percent. You have to either self build or you have to buy the RECs. And there are penalties. Penalties of up to 50 basis points for unexcused noncompliance, okay, to be assessed the stockholders. In other words, you can't add that to your rate, baby. That's what it's going to cost you. So even though there's a -- what I would call a fairly generous -- some may disagree -- a fairly generous rate cap, there's a heck of a penalty if you don't make it. It comes right out of your shareholders' pocket. Do you know what that does to your stock? Do you know what that does to your bond rating? You're going to make it.

All right. Here's some more components. They had a solar and wind carve out. The carve out for solar and wind was at 25 percent of the RPS requirements had to be met with either solar or wind. Okay. And the -- some additional components dealt with cost recovery. In other words, whatever it costs, whatever additional amount of money it costs to do renewable energy, the IOUs, investor owned utilities, who furnish 75 percent of the electricity to customers in the state, the other 25 percent are from municipalities and co-ops. You know, they could pass incremental costs on to their customers. Now, the other 25 percent, the munis and the

co-ops, their rates, specific rates, are not reviewable by the Public Service Commission, so theoretically they can charge whatever they want to. I say theoretically because it's more theory than real because nobody wants to charge anymore -- I can guaranty you, OUC -- Jennifer, are you here? Okay. I guaranty OUC -- Jennifer Szaro at OUC, I guaranty OUC doesn't want to have to charge its customers anymore than they have to. They want to do a renewable policy, but they want to try to keep the cost down. But for the most part, getting started is going to cost more. Okay.

Now, the theory is that the more you install, the more the price comes down. Like solar is a good 30 percent less than it was this time last year. Solar PV is 30 percent less than it was this time last year. Now, it's going to go down. Will it go down at that same rate? I don't know, but it's going to continue to go down. Technologies are increasing by leaps and bounds. I mean, somebody will come up with -- I'm on the advisory board of the Florida Solar Energy Consortium and -- which is a group of all the universities who are trying to coordinate their research and then to commercialize it. I can tell you that somebody comes up with something that will, say, increase the efficiency of a solar PV panel 15 percent,

they don't want to invest money in that. That's not enough. That's not enough incremental change, you know, for a technology that's basically in its infancy when you consider what they've looked at. So okay. Let me make sure where I am here.

So they made their report to the legislature, and here is the legislative proposal. Senate Bill 1154. The Senate did pass this bill. The House never passed the bill. It never even got out of committee. Not a renewable energy bill. The House did pass an offshore drilling bill. Okay. The Senate didn't take that up. But at any rate, here it is. It was in Senator King's committee, and it was very much considered his baby. Here's the concept. I will allow IOUs to have 20 percent of sales by the end of 2020. So it was a 20 by 20 portfolio standard, but it wasn't a renewable portfolio standard. It was called a clean portfolio standard, because, okay, up to 25 percent of the percentage goal each year could be in what was called clean energy, which is new nuclear energy, not existing that some of the utilities have, but new nuclear energy, or -- or and IGCC with carbon caption sequestration. IGCC means natural gas combined cycles. So natural gas, you put carbon capture sequestration with it, called CCS, and you can do -- you reach 25 percent of your goal

if you did that.

Okay. Here's some other components. This is the timing of the goals. So you had 20 percent by 2020. So essentially, even though it's 20 percent by 2020, it means the last day, December 31. That's why you see some of these goals expressed that they say it's 20 percent by 2020, but you'll see somebody showing -- it really shows January, '21, 2021, because it's the last day of the year.

Okay. The rate cap. The rate cap, same that the Florida Public Service Commission recommended at 2 percent. Okay. But let's see how that would work. Okay. I'm sorry, they had it mandatory. Same as the RPS. It was mandatory. It wasn't aspirational for IOUs, it was mandatory. They had to do it. Let's hit the rate cap. Now, here is how the rate cap is set up. Okay. Up to 1 percent of your cost could come from class 1 clean energy resources, which are solar and wind. Class 1, okay. Class 2 was all other clean energy resources. 1 percent could come from class 2. Talking about the rate cap now. That's your total rate cap. No expenses for your clean energy sources, which is new nuclear and the gas with capture and storage can be counted toward your rate cap. So that was what the Senate passed last year. Like I said, the House didn't

pass anything. Renewable energy never even got out of committee.

Now, this year -- I think you've got a handout of some of the senate bills. Not all the senate bills, but some of the senate bills. This year, Senator Deckert has got the same bill that was passed last year out of Senator King's bill. Senator King has since deceased. That committee is chaired by Senator de la Portilla, and I haven't spoken with him, I don't know exactly where he is. I've got to believe since President Jeff Atwar appointed him and Jeff Atwar would like to see a renewable bill, would like to see a renewable portfolio standard, he would support that. I don't know that, but Senator Deckert has filed the same bill, the exact same bill that was passed last year by the Senate. Senator Constantine has passed another renewable portfolio standard bill that seeks to adopt the rule from the Public Service Commission. So I've already gone over what the Senate passed, already gone over what the Public Service Commission recommended. So those are the two bills that have been prefiled. Senator de la Portilla has filed four what we call shell bills. They're just place holding bills with no detail in it. Senator Mike Bennett has filed an interesting bill which deals with renewable energy but it doesn't have a

renewable portfolio standard. A lot of folks are afraid that the House will not pass a renewable portfolio standard, so in order to kickstart, in order to get some renewable power going, it calls -- the senate bill calls for so-called three tranches of renewable power. 310 megawatts in 2010, 200 in each of years 2011 and 2012. And it could be either -- it can be anything renewable. Okay. It calls for full cost recovery. Now, the House -- like I said, nothing has been filed in the House dealing with anything remote to a renewable portfolio standard. They have, however, prefiled a bill for the offshore drilling component, you know, to do away with the moratorium on offshore drilling in the Gulf in Florida waters. Now, some people think that's just a lot of speculation. I don't know. Okay. I just don't know. There's a lot of speculation that what the House is going to do is to try to -- because the House passed the offshore drilling last year, is to try to pass a bill that will -- I mean, try to use that as a lever to try to get with the Senate to workout some kind of renewable portfolio, at least some kind of renewable legislation, in addition -- you know, in exchange for the Senate passing offshore drilling. I don't know that -- I can tell you this. I met with Dean Canon last week. Dean Canon is the incoming Speaker of the House.

He's not speaker this year, but he's incoming, and he'll be coming there the next year. And, basically, I mean, the offshore drilling is one of his babies. Okay. But what he says, and I was aware of this, what he says is what he wants is a comprehensive energy bill. He wants a comprehensive energy bill. He believes as I do, and I think most of us do who study energy policy. You need all players. You need all the oil and gas, you need all the renewables. You need nuclear, you need all the renewables. You need everything you can do, you need every component you can do. And what I didn't realize was what he said he was willing to do, what he wanted to do was all the revenue that the state would make, would have coming in from the offshore drilling, you know, from the sale or leases or offshore drilling rights, that that would come in to support renewable energy. That's a play that would work with even some environmentalists. George is going to come up here and talk in a minute, and I see Melissa shaking her head. That won't work with everybody, but that will work with a lot of environmentalists. If we have the right kind of offshore drilling bill with the right kind of protection and conditions and all that kind of stuff, I can go along with that as long as it's with an overall -- it's an overall energy bill and it's not just drill,

baby, bill. So what's going to happen is anybody's guess.

It's very important that Florida have an RPS. Some of the House members last year were quoted as saying, we don't need to do this in Florida because the feds are going to do it. Well, the problem is, if the feds do it, they won't require that renewable energy to be produced in Florida. All FP&L has got to do is just bring those wind credits, those sun credits, and other states don't have to do a thing in Florida if it's a federal RPS. But a state RPS, you know, you have to do -- they would have to generate the renewable energy in Florida. Okay. And what I've said for all along is this, if we do it right in Florida, if we do it right, if we do renewable energy right in Florida, we can do two things. One, we can develop our economy at the same time we keep our environment green. Now, that's the win/win and that's doable. And so that's what I hope we do.

Okay. That's all I've got on my presentation. But I am very willing to take any questions you have or any comments you may have. Or any rebuttal, George, or Melissa.

Any questions?

Well, I'll be around. And, you know, I encourage

-- and I will be around for the break. Right now, I plan -- unless some client tells me I need to do something else, I plan to be here the rest of the program, and I will be interested in talking with anyone that would be interested in speaking about --

Yes. I'm sorry.

UNIDENTIFIED SPEAKER: What is it about the House -- what is it about the House that lost that --

MR. LEWIS: Can you come down to the mic?

UNIDENTIFIED SPEAKER: Oh, I'm sorry.

I'd just like to know, in your opinion, what is it about the House that has the push back on like the Senate? The Senate wants to push the RPS and the House does not. Could you give us a little background on that, or your opinion?

MR. BOROUGHS: Well, part of it is speculation. You know, I -- first of all, for any bill to get passed, you need a champion, you know. Whether it's state legislature or Congress, we have to have a champion. Somebody needs to get out there and, guys, we need to get this done. There is no champion in the House. So you start off -- and the champion needs to be able -- either needs to be leadership, you know, the leader, or needs to have the ear of the leader, or it just doesn't work and there is no champion. Second, I think the last

year, my impression last year was a lot of folks in the House just doesn't understand it. You know, there was a lot of noise. You know, the folks from FAIR were -- organized folks from FAIR were trying to do feed-in tariffs, and the Utilities hated it, so a lot of space in trying to do renewable energy, especially solar, was taken up by these guys who want to do a feed-in tariff, and it sort of took away from -- it helped to poison the well, I'm told. Also, I don't think the Utilities were organized. You know, they talked about organizing it, they talked about supporting something, but they never really did. Okay. They never really did that. And this year, I mean, you know, they really want to do some renewables. The devil is in the details, frankly. I mean, the devil is in the details because here's the problem. You know, if you get -- no matter what an RPS says, when they do renewables, even if it says you can do cost recovery, even though the PSC will allow them to do cost recovery, PSC still has final say on what their rates are, basically what their rate of return is, and they're afraid that they're going to get nipped on their rate of return. I mean, there are a lot of interests here, and the Utilities have a lot of sway with the -- you know, with members of the House.

I know I've answered that in a very general way, and

maybe some of you have better answers than I do to that. Bottom line, the Senate had some champions and I think -- and the House did not. And the House hopefully will do better this year. I can tell you that Steve Precourt, who chairs the energy committee, you know, is very much in favor of doing something. He won't commit to how much, but he understands what I've explained about an RPS. He understands why we need to do one in Florida. But it's ranking people that will make that decision. You know, he will not make that decision. Okay? Don't quote me to Steve on that, please, but that's the way it works. That's the way it works in our legislature. You know, if you don't play ball with those that appoint you, you don't stay in that position very long.

Yes, Melissa.

UNIDENTIFIED SPEAKER: Of all the bills on this handout, which one do you think stands a chance of gaining the most support both in the Senate and the House?

MR. BOROUGHS: The same one the Senate passed, the same one that Ken introduced, his committee passed last year. I think that's got the best chance in the Senate. I think there's a good chance the House may start with that. I don't know where they'll end up, but basically

-- and affordability is the big issue. Affordability is the big issue. But -- and nobody, nobody -- this is a terrible time to be an incumbent in a Florida legislature right now. You know, none of them want to add one penny to any taxpayer's burden or one penny, you know, to any consumer's burden. They don't want to do it. They're afraid to do it. So affordability is a big issue. So that's why I think -- I think the rate cap handles that. That's why you have a rate cap. You're not going to get to 20 percent if you're just in pure renewables. Even a clean portfolio standard, 20, 25, you're probably not going to get there for a 2 percent rate cap. But that covers the affordability.

Yes, sir.

MR. STRICKLAND: Hi, Tommy. My name is Blaine Strickland. Thank you for your comments this morning. I wonder if you could reflect on maybe the parallel path of, maybe I would call it, the carrot instead of the stick in the sense that there is also a move to create credits for individual homeowners to enhance their own energy consumption through solar energy panels on their house and other things that they can do personally. So this feels like it has to work in concert with maybe a voluntary holistic type approach.

MR. BOROUGHS: I didn't -- I was going to get into

that, but I knew I had a constrained amount of time, but basically it is a carrot and stick approach. Okay. The stick is the RPS. The carrot is the incentives. There are any number of incentives, and, you know, we got net metering, you can sell it back on the grid, we've got some renewables. I mean, we've got some tax credits that the state coffers ran out of, but they've been replenished by the federal stimulus money that's coming in. So there are any number of ways that you can stimulate by doing incentives, but in a lean year like this, the legislature is not likely to do anything that's going to take away -- that's going to cost them money. That's what they've -- Steve Precourt told me, tell me all you want to about incentives, but don't tell me anything that's going to cost me money. And I think that's where they are. The feds are in a different place. However, you know, what you've got to do, you can't just do a one or two or three year incentive. That's not a big enough incentive for somebody to go ahead, you know, and make a bigger investment. You need to have a longer range incentive. You need to have something to last 15 years at least, 20 years or better so you can put in a whole -- whatever. Okay. And you can finance it out. That's whether you're a homeowner, a business owner or a plant owner.

Kirstie's running me off, folks, but I'll be around. Okay.

MS. CHADWICK: Thank you. Couple of logistical housekeeping things. If you're going to ask questions, it would be great if you could just go to the microphone, because we need to record the questions as well as the answers for our transcripts as well as for the television camera folks here. And although we're behind here a little bit, I promised we'd have a half hour at the end where we can do an open Q&A time, so we will get you out of here on time if you need to go, so because the dialogues are healthy and productive, we're going to go ahead and try to accommodate questions if we can.

Next up, we have Jim Fenton, the tie guy. Although I see a couple of ties that looks a lot like Jim's in the back of the room as well, so this will be a tie contest, I think, at the break.

Jim, many of you may already know him, but he's been a consistent attending speaker here. We really appreciate his continued support of what we're doing. Jim is the director of the Florida Solar Energy Center. Is it director or executive director?

DR. FENTON: Director.

MS. CHADWICK: Big cheese guy. He is -- he leads a

staff of 140 folks in the research and development of energy technologies that enhance Florida and the nation's economy in environment and also educates the public, students and practitioners on the results of the research that FSEC conducts. FSEC is the nation's largest and most active state supported renewable energy and energy efficient research institute.

In addition to his duties as FSEC director, he leads a 12 member university and industry research team in a 19 million dollar U.S. Department of Energy research program to develop the next generation proton exchange membrane of fuel cell automotive engines. That sounds serious. Dr. Fenton also serves as a professor in UCF's mechanical materials and aerospace engineering department.

Prior to joining FSEC, Dr. Fenton spent 20 years as a chemical engineering professor at the University of Connecticut. His research activities are fuel cells, pollution prevention, sustainable energy and in helping FSEC expand its nationally acclaimed research and education programs which focus on hydrogen, alternative fuels, solar energy and building of energy efficiency.

With that, I'd like to introduce Jim. Today, he's going to give -- talk a little bit about some of the specific programs that could be implemented in Florida

should an RPS pass, and he's got a particular project that he would like to share with you as an example of that.

DR. FENTON: Thank you very much. It's nice to be here again today. Tommy set a nice stage for the desire for the State of Florida to have a renewable portfolio standard, and as he's pointed out, the advantage of a renewable portfolio standard is you set a bar, a requirement that the market have so much on a percentage basis of renewable energy. And with that, an industry responds and delivers, hopefully, that goal. Or as we all hope, exceeds that goal. Without a standard such as that, there is no market. That's the key. Without a goal, there is no market. All right. If we establish that goal, we have renewable energy, we've got a cleaner environment, so on and so forth. That, in turn, also generates lots of jobs. And, yes, there is a cost. There's a cost with building any power plant, whether it be a renewable energy one or a nonrenewable energy one. I'd like to focus on some of that today.

I've got a map here of the United States. You'll notice, as was pointed out earlier, John Lewis mentioned this, there are 35 states that have chosen to go green, along with the District of Columbia. There are a few checkerboard green states. Those are ones that have

actual goals; i.e., no penalty if they don't meet those goals. And you'll notice in every single case, there's a percentage, okay, listed next to the state's name, along with a date at which it plans on achieving that percentage. Now, Tommy Boroughs also shared with you that in most cases states have sort of step-wise goals, so much percent by this year and the next year and so on and so forth. Of these 35 states, most of them may have started out a little bit low. They've all raised their bar. Every single one of them has raised the bar. Almost every five years, they increase that. California is now up to 33 percent by 2020. That's their goal. All right.

Now, some of them have carve outs. The little yellow dot there shows you that solar hot water, okay, is indeed a mechanism of meeting the goal. The little FSEC sun symbol there shows that in some cases they actually have solar carve outs associated with those things. The other thing you'll notice is that there is some states that happen to be not green, and you will happen to notice that they tend to exist in the south. Okay. Now, there's a reason for that.

I've taken that same map in front of you here and put the retail residential price of electricity on it. Here in Florida, we're paying about 12.3 cents a

kilowatt hour now, okay, for the price of electricity. You'll notice that up in Connecticut, which is where I used to be, they're paying 20 cents for electricity. If you can find West Virginia, believe it or not, West Virginia went green. Isn't that shocking? Okay. We haven't done it in Florida, but they've done it in West Virginia. West Virginia over here is at 7 cents. So think about that now. People in Connecticut pay three times the price for electricity as they pay in West Virginia. Now, we pay more than they pay in West Virginia. All right. Now, there is one thing I learned when I moved down here to Florida. To get to the south, you go north. That's obviously not a geography question. But you'll notice that those southern states to our north pay less for electricity than we do. You'll also notice that Hawaii's out there at 23.8 cents since the price of fossil fuels has actually gone down recently. They used to be at 29 cents. And Hawaii gets its fossil fuels by boat. California is up at 15. The Pacific Northwest is around 7 or 8. They've got a lot of cheap hydroelectric. Utah has got a lot of coal. It's 8.6. But it decided to go green, too. So if you look at these things, you can see then that there is part of a reason why the south, okay, is not green. If the attitude is, if it's cheap, it ain't broke, why fix

it, well, that's part of the problem. Okay. People in Connecticut are paying a fortune for electricity so they're looking for options. Okay. Alternative energy will always be alternative until it's cheaper. Okay.

All right. Well, there's a lot of states where it's cheaper. Okay. We're at 12 and a half. Now, it's interesting that people will tell you that we can't afford climate change. You, the citizens of Florida, already voted for it. Okay. The reason why we're paying 12 cents compared to 10 in the other southern states is that we chose to burn clean natural gas instead of coal. And, yes, in today's market, that's more expensive. So you are paying more for your energy now because we use clean natural gas and a little bit of nuclear and few other things than those states to the north of us that burn coal. Okay.

So what we're not aware of is that the price of electricity in the United States varies widely. Various policies, various reasons. All right. And as a result of that, some people are more prone to look for alternatives than others. One other thing you should notice. Of all the states other than Alaska, and we can talk about Alaska too, but all the states other than Alaska, which one that's green -- okay, that's not green is the most expensive. Look carefully at the map. All

right? All the states that are green, a lot of them are more expensive, some are cheaper, but the clear one that's the most expensive on here is Florida. So guess what. We're next. We will have an RPS. We will figure out that we need options and alternatives, because the price of electricity out of the wall is going up. And we'll look at those options. The question is when. We'd like it all to be tomorrow.

Now, one of the other things that Tommy had pointed out was that when we purchase fossil fuels, you buy something. You consume it and it's gone. The State of Florida spends 60 billion dollars a year on fossil fuels. After we consume them, they're gone. Now, about 30 billion of that is for transportation, gasoline. The other 30 billion is for making the electricity that we use today. None of it comes from Florida. All right. Now, does anybody remember what the states budget is? 60 billion dollars. So we burn 60 billion dollars. That's what we do. And it's gone. Okay. So we ship money out of the state of Florida. That's the business we're in.

Now, there are states that do have coal. So West Virginia, as you notice, had the cheapest electricity around there. Unfortunately, they have black lung disease and various other things that go along with

that, but they keep all the money in West Virginia because it's their coal. Likewise with Utah and so on and so forth. You'll notice none of the states in the south keep the money at home. They like cheap prices but they ship all their money out of their boundaries because we don't make it here. As Tommy also pointed out, Florida's the land of biomass and the sun. Take advantage of that.

I was asked to also point out, in addition to renewables, there is some interesting opportunities out there for us as we add more renewables into our electric grid because renewables tend to be a function of time of day and so on and so forth. They are not baseload power plants. They are run 24 hours a day, 7 days a week. We have issues associated with incorporating things into the grid. I just wanted to point that out. There are some pictures that came from the Department of Energy. We're looking at solar or wind as sources of energy. We're putting these in through the grid. We are feeding them out to various homes and residences. Some day, we may integrate our car in with our residences and we do a systems analysis over that whole big picture because you'll be using electricity for your transportation. Keep in mind, right now we think of liquid fuels as our mode for transportation. The future will be electricity

even in your car.

We talk a lot about biomass. I remind you that when you go into biomass, most of you think transportation fuel. We can coal fire, okay, biomass in our existing coal plants if we choose to do that. We just have to say we're going to do it. We already decided we were going to put 10 percent ethanol in gasoline. Just did it. And here we are arguing about an RPS. Well, it's the same thing. 10 percent ethanol in gasoline. Why don't we just do it. It sets the market. We can do the same thing with an RPS. I prefer to think of biomass as baby coal, because that's what it is, it's baby coal. And what do you do with coal? Hopefully, you use it wisely, okay. With biomass, sometimes we get into problems with the fact that we're interested in subsidizing agriculture, which is a good thing, but not an energy policy. There's a lot of things we can do with it. Perhaps more importantly, I remind everybody that in addition to burning fossil fuels, those are our chemical feedstock, it's much better to use them to make something of value, of interest than to burn them. The lowest value anything has is its energy value. If you can take garbage and make something useful out of garbage, it's still better than burning the garbage. If it really is waste, then

let's get the energy value out there. Okay. So that's where the future lies.

Now, I've got two maps here. One's the world's biggest market for solar energy, and the other one happens to be the country I live in, and then the state I live in. Germany is the world's largest market for solar energy, yet it has half the solar resource of Florida. Now, New Jersey has far more solar rooftops than we do in Florida, and yet its solar resource isn't the same level as Florida's. Okay. A lot of the case, that's policy that we've talked about here today. It's also the fact that people in New Jersey already pay more for electricity than we do. So you've got a lot of issues associated with this. The other thing that I want to point out here is that, quite often, people will say, well, geez, the best solar resource is in the Arizona, New Mexico sort of desert area. That's correct. If that's a hundred, that dark scale there, then we at Florida are at sort of a 75, 85 kind of level. The real key there, though, is free real estate. To collect the sun's rays, you need area. Okay. And where is the free real estate. Well, out in those Arizona, New Mexico deserts, the real estate is free. I can build a large power plant, which is what utilities like to do, and generate energy from that, and hopefully

generate it in a cost effective, competitive way. Where is the free real estate in Florida? That's the key. It's not the solar resources, it's the free real estate. The free real estate happens to be on your rooftops. Top of the Wal-Marts, highway right-of-ways, underneath those long transmission lines that we run. The unfortunate thing with that, though, is that it's a distributed generation model. In other words, that -- how does the utility make money when the power plant's on your roof. It's just a new model. It's a different way of thinking of things. We're traditionally used to thinking of large scale power plants. Eventually, we will end up with situations where we're taking advantage of all the free real estate. Until then, we've got these policy issues to deal with, we've got economics, so on and so forth. If there's a will, there's a way. So Germany doesn't have free real estate, Germany clearly doesn't have the sun and they chose to go ahead and do it. Okay.

Now, recently, Tommy mentioned that there's a possibility that some of the bills, in addition to having an RPS, might have what they call tranches on them. And as he pointed out, 300 megawatts for next year and maybe 200 megawatts each for the following years. And this last year, FP&L put 110 megawatts of

solar. So on an installed capacity, Florida went from last to No. 2 behind California in these three installations. Okay. Now, still a very small fraction amount of electricity we have, but it can be done. What I've done here is taken the costs associated with the installations that FP&L has installed. So you'll see here that in the case of the Desoto FPL, that was photovoltaics, and that was 25 megawatts. Turns out that 25 megawatts generated 2 million dollars worth of tax revenues for the local community because the property value that FPL put the solar on was now more valuable. FPL put in three solar projects, a total of 110 megawatts. Their target was to charge their utility customers about 31 cents a month more to help pay for that. When you build any new power plant, it costs you more money. You go by a new car, your expenses go up, folks. Okay. So unfortunately you don't get something for nothing. Okay. You do have to make an investment in this. So we are paying a little bit more for those power plants, as we would for any new power plant that FPL might have installed. In this case, okay, now, 5,000 total jobs came out of that 110 megawatts. All right. If I extrapolate, and my numbers now in green are based on using the numbers in black and making calculations. Okay. So for FPL's three projects, based

on the tax revenues that it might have gotten from the 25 megawatts, there would be 9 million dollars worth of tax revenues associated with the 110 megawatts. I realize I'm just doing calculations here. Okay. Now, you'll notice I have a 20 percent solar line there. So magically, if we decided to go ahead and have 20 percent of all electricity coming from solar, based on using the FPL numbers there, you will see that I have 27,000 megawatts of power. Substantially, a thousand times more than the solar plant. Okay. Your average cost per month per customer -- this will be spread throughout the state -- will be $38. You say, that's a lot of money. I don't know. $38 a month to generate 1.2 million jobs. Maybe that's not too bad. 1.2 million jobs. There's 18 million people live in Florida. That's a substantial amount of jobs. You can look at some smaller numbers. 10 percent solar, if you'd like. It's 620,000 jobs. Okay. Or if we go with the tranche, which as you see here, there's a 3,300 megawatts I put down there. If we added that in, the cost per month would go up to 42 cents on the citizen's electric bill to pay for that. Okay. Now, I'll remind you, because they overcharged you for the price of fossil fuels last year, you are all getting a rebate in your January electric bill. You may not have gotten it yet, but you are. That turns out to

be $4 a month. Okay. Because they overcharged you for the price of fossil fuels last year, you're getting $4 a month back. Okay. Wait a minute. 42 cents is what we're asking for this tranche, and it generates 13,000 jobs. Okay. An RPS is all about jobs, jobs, jobs, jobs. We have to do a better job of selling that.

Now, I show you a picture here of how energy generation in Florida brings tourists to Florida. You may have heard that the Orlando Utility Commission, in concert with Orange County, put on top of the Orange County Convention Center 1 megawatt of PV. They paid a little bit more for it. They used some tourist dollars. Why did they do it? Because it attracts conventions to Florida. We generate energy renewably. The Super Bowl was all offset. Okay. It was all renewable energy generated. Okay. Why do you do that? Because you can make money doing that. That's why Orlando did it. Okay. There is an example of energy bringing tourists to Florida versus energy washing up on our shores and scaring the tourists away. Some of this is just marketing.

Now, we brought up the fact that the utilities themselves could go ahead and build these large solar power plants. There's tremendous opportunities for you the homeowner to take advantage of putting solar on your

rooftops. As an example, if, say, we were going to get to 20 percent solar, and I've just speculated here that we might have -- maybe in that scenario we might have 2 percent solar PV on your roofs and 2 percent solar thermal on your roofs. I've given you the jobs here. Substantial amount of jobs. Okay. In the lower left there, 31,000 jobs. Okay. If we have a 2 percent goal of solar PV on your rooftops, and the solar thermal would be 32,000 jobs on top of that. So substantial jobs.

I want to point this out. There is a way to get something for nothing. Your goal should be to lower your electric bills. This is a plot of the per capita electricity use per person as a function of time. Okay. Back in the '60's, the United States, Florida and California, were all consuming around 4,000 kilowatt hours per American in the United States. Then we moved up into the '70's and everybody's increase was going up. We were getting bigger houses and so on and so forth. Okay. The Arab oil embargo, after that period of time, California went flat, and the rest of us, albeit not still increasing at the same rate we did before, and if you look way out to the year 2000, and I don't have any data after 2002 yet but we'll start getting that soon, it looks like we're actually dropping back down.

Several states are, as well as California's even dipping down a little bit lower into the future here. But you see that there is a gap. To give you a flavor of that gap between California and Florida is 5,000 kilowatt hours per person. At 12 cents, that's $600 per person. At 18 million people in the state of Florida, that's 10 billion dollars because our houses aren't very energy efficient. So California stopped spending money on electricity because they choose to invest in their own homes. And with that energy savings that they're now not spending on electricity, like we are, they used it to purchase solar. Okay.

Now, let's talk about the cost of electricity. If you look at this, this is a table then of the four largest states, plus the United States, and you can see the electricity price in cents per kilowatt hours. I told you that in Florida we're not doing things because it's pretty cheap, and you can see that Florida and Texas have cheaper electricity costs. California's at 14 and New York's up there at 19. United States on average is about 12.

Now, the interesting thing is, I told you that California's homes don't use much electricity. You can see here that the average home in California -- and these are homes, not apartments and so forth, so these

are homes -- in California, uses 689 kilowatt hours per month. You can see in Florida we use almost three times as much as that. All right. So it's not the price of electricity. It's not the price of a gallon of gasoline that matters. It's how much did you spend on the stuff. How much gasoline did you buy this year? Most of you don't even know. But you all know the price of a gallon of gasoline. Okay. If the price of a gallon of gasoline costs $100 a gallon and you use none of it, who cares? Okay. All right. You got to keep in mind, it's what you really spend on the quantity. Now, look at that. Florida spends $190 a month on electricity. California only spends 97 bucks a month. Now, in California, $96, they get a tax of $2 that comes out of that 97 to pay for all the renewables they've been using forever. Okay. So it's not 97 plus 2. The 2 comes out of the 97. But we have zero. And the zero is coming out of 190. Okay. So the real answer is, make your homes all energy efficient, then we'll have no problems subsidizing renewable energy. But we don't have that policy either. We're paying a fortune to put electricity in your house. What you should be doing is investing in making your home more energy efficient. Okay. That's the real key.

Now, let's look at these taxes, if you will, on

your electric bills. There are 16 states, plus the District of Columbia, that have what are called public benefit funds for renewables. So you can argue it's a tax on your electric bill. Okay. That's what it is. Okay. I have no problems with making energy a sin. Anytime you use it, you are sinning. So let's tax the hell out of it. We've got a sin tax and I will use those resources to help you get over your sinful nature. It's great. What's the problem? And, by the way, we keep all the money in the state of Florida. Okay. Maybe that isn't so bad. It's called wealth accumulation. Something to think about. But these other states, mostly the ones that paid a lot for their electricity prices, as a result of paying a lot for their electricity prices, they made their homes more energy efficient and started looking at other options. We're behind the thing. But we can catch up. Okay.

We also hinted about the fact that PV electricity on your roof, okay, can be cheaper than in the wall. Well, okay, back in 2006 on a levelized cost of electricity, that's what I'm showing you here, it was about 30 cents. So you say, that's too expensive. Well, in 2010, it's 15 cents. Okay. In 2015 -- and these are without subsidies. In 2015, it's going to be 9 cents. We're already paying 12.3 out of the wall. So

in 2015, PV on the roof is cheaper than electricity out of the wall. Will it be Chinese panels or will it be Florida manufactured panels? I'll definitely be putting the people back to work to install them. That's good. We have high manufacturing jobs here. We have to get ahead of the curve.

Now, solar hot water heaters. That's the reason the Florida Solar Energy Center was founded 35 years ago. We have a lot of them, at least in numbers. Over 139,000 here in the state of Florida. That leads to about 152 megawatts of solar energy. Unfortunately, only 2 percent of the homes in Florida have solar hot water heaters. Okay. There is an up front cost problem here. That's what the issue is. Suppose we had 40 percent. Well, if we had 40 percent of all Florida homes with solar hot water heaters, we'd have 32,000 job years generated. We'd be replacing about 2 percent of Florida's electricity with solar hot water heaters. I switched my logics around for you. When anybody talks to you about energy efficiency or improvements on your home, you immediately ask, payback. I don't talk about that anymore. Okay. For sexy products, nobody ever talks to me about payback. Okay. You got to go by a new fancy car, you got to get a granite countertop, you got to buy a plasma television set, nobody asks what the

paybacks for those are. Let's be honest. When you're paying for sex, nobody cares. All right. That's the problem. Now, fortunately, PV panels on your roof is sexy now. So people are asking me about them all the time. I will tell you, that's fine, that's great, please make your home more energy efficient, please put a solar hot water heater on there. This really is your money. You'll do better with that. Then go ahead and put PV on your roof. But now when I talk to people about solar hot water heaters, I give you a different story. If you have $2,300 -- a lot of us don't, but if you have $2,300, can you get a 20 percent return on your money? Anybody here getting a 20 percent return on your money? Invest it in your own home. You will and you'll keep it all. And, yeah, you'll lower your electric bill, too. That's what you will get, all right, for a $4,000 solar hot water heater installed on your roof with federal tax credits. Like now, the federal government will give you 30 percent off. Okay. Along with a state rebate, it gets you down to the point where you're getting a 20 percent return on your investment. At the levelized cost of electricity, even without rebates, 10 cents, that's cheaper than what you're paying out of the wall. You should do it even without that. But it's down to 5 cents if you include the

rebates.

I'll do this rather briefly here because I know I'm running out of time. It's interesting how we do things here in the state of Florida. The recent press releases have just come out. I got quoted in some of them that the Governor has come up with 10 million dollars from the stimulus money to enable us to go ahead and put PV panels on emergency shelters in 90 schools throughout the state of Florida. Yes, we're going to go through that. What's important is that we're putting 90 schools with some PV to help with emergency shelters. All they want to talk about is the fact that it's going to cost 10 million dollars. So the headlines always say, Governor to spend 10 million dollars. I hate that because I'm getting everybody calling me up recommending how I can give them money to help spend it versus volunteering to help me actually put the PV on the schools. Okay. But we'll get there.

What we've had, some nice things going on in this state, is that we have actually worked with our children in putting some of the renewables out there. And the State, through the Florida Energy Office, has been providing funds to put PV on schools since 2003. And so we've been putting PV on the schools where the school children get involved and learn about that energy. And

up until 2009 now, working together with utilities, and the utilities have stepped up to the plate here. They're not the bad guys. Okay. They're in the business of making energy for us. You're in the business of reducing your energy bill. You don't want to spend anything on energy. They're in the business of making energy. Now, in fairness, let them make a profit on renewables. I'm okay with that. That's great. That keeps the money in Florida. That's the goal. Keeps people employed in Florida, keeps the money in Florida. Okay. The utilities have stepped up to the plate. All of them have. All right. We have over 55 now of these installations already in Florida where we have one to six kilowatts of demonstration systems, and we have four of these 10 kilowatt emergency shelters. This is the RFA that was given to the Florida Solar Energy Center to go ahead and put the 90 10 kilowatt systems on top of the schools. So this will be the future. We will have these 10 kilowatt PV grid battery backups at 90 schools. The anticipation is there will be one in every county and then we'll have a few others.

Just to point out real quick, just to give you a flavor of this, the average high school in Florida uses a half a million dollars in electricity in a year. A half a million dollars in electricity in a year. So if

we could help educate the kids so they cut the electric bill down by 10 percent, I can make every single one of the politicians happy, because we'll go ahead and put PV on every school and the kids will lower everybody's tax bill by saving energy in the school. More than what it will cost to put PV on the rooftop. So if I can't get the politicians to do it, I'm going to get the 10 year olds to do it, and they'll probably do it quicker and better, and then eventually, they'll be elected and become politicians. So the future is a happy one. Okay.

Very upbeat. We'll get this done. It has a lot to do with education at all levels. Please get the -- I want to go back. Please get the word out. You'll notice that in a lot of cases, the sun comes from up above. These are my two inspirational slides along with the educational ones.

Thank you very much.

MS. CHADWICK: For the second time, we're going to go ahead and move into our break. Jim will be around. We're going to have some Q&A sessions towards the end of the seminar for all the speakers. 15 minutes, very prompt. Grab your coffee, grab your breakfast, hit the restrooms. 9:45, we'll be starting.

(A break was taken.)

MS. CHADWICK: All right. If everybody could have their seat, I'd greatly appreciate it, and I appreciate everybody listening to James, the bell ringer. That was great. Thank you, James. We're just trying to stay on track as best we can with the agenda so folks can get on with their days if they have other things to do.

Next up is the perspective from the Utilities, which is a very important aspect of this, because we all, I think, have ideal goals and hopes for energy standards and what not in the states, but at the end of the day, it's the Utilities that ultimately are responsible and involved and potentially bear some of the cost of that sort of an implementation. So, today, I have a good friend as well as an expert from the Utilities side of things that's come in to represent that side of the topic.

Jennifer Szaro is currently with the Orlando Utilities Commission. She manages the renewable energy, corporate sustainability and alternative fuel programs for OUC and she resides in the sustainable services business unit of that organization. Prior to coming to OUC, Jennifer was employed as a senior energy analyst for FSEC. She works with Jim. She was there for nearly nine years. She has her bachelor's degree in environmental science from Florida International

University, and she received her master's degree in business from UCF, and that's where I met her four or five years ago. With that, I'd like to introduce Jennifer, and she will talk about the Utilities perspective. Thank you, Jennifer.

MS. SZARO: All right. They've got a stop watch on me. So we heard a little bit about the resource side of the debate, and we heard a little bit from the policy perspective, and now I really want to talk to you about getting it done. So if we were to get an RPS in Florida, how might we accomplish that as a utility? What would be the benefits to the customer and what would be the barriers or potential risks associated with it? So we're going to talk a little bit about our personal business objectives.

I can't speak for every utility out there. OUC, just to give you some background on us, we have about 250,000 customers. We are a municipal utility, so we're nonprofit. We can't take advantage of some of the other benefits that maybe some of the investor owned utilities can take advantage of, like tax credits. So when we shape our programs to pursue renewable energy, we keep those factors in mind and we shape our programs accordingly.

One of the biggest issues for us is maintaining a

balance between sustainabilities, affordability and reliability. Everybody wants their lights to stay on all the time, and we do, too. So that is basically how we got our moniker, if you will. And we have an interesting demographics here in Orlando. Our customers, actually 50 -- over 50 percent of our customers are multi-family, and the average income for our customers is $35,000. So we don't exactly have the best demographics for promoting some renewable energy programs, but we're learning creative ways to work around that. So you might ask, why would a utility pursue renewable energy? Maybe it's counterintuitive, but, in fact, it's not. We're trying to take a long term view of the world. We see the utility industry is changing and that consumer markets are changing and we've been keeping a really close eye on these different markets and industries and trying to figure out, how do we do the change management to incorporate those technologies into the way we do business.

One of the things that really drives us is regulation or impending regulations and policies. We want to make sure, in order to keep the lowest possible rates for our customers, that we choose the right -- the right prices for our customers by choosing the right mix of fuels at that given moment. So it's in a state of

constant flux. We never have the exact same portfolio at any given moment of the day, and in our planning, you know, we do long term planning and we'll continue to change our mix as the landscape changes. So we're very focused on making sure that we have carbon offsets or RECs where we need them for our customers. We do generate a lot of coal energy. We have over 50 percent coal right now, but that's something, again, that's in flux and it's changing. As I mentioned, since we are a nonprofit, we can't take advantage of the tax incentives that are out there, so our programs focus on the customer side of the meter for the most part. Something a little bit different than maybe an investor owned utility might pursue. And we are more directly linked to our customers and to our community because we are a city owned utility. So if our customers and commissioners tell us they want renewables, we're going to get it for them, but we want to do it in a way that provides the least cost planning. We don't want to raise the rates of our customers needlessly.

That being said, we've been doing our homework, and we have waited and waited for the RPS to come along here in Florida, and it hasn't occurred yet, so we decided, let's stop waiting. Let's just go ahead and set our own goals. So in March of this year we will be announcing

our own set of internal renewable energy and conservation goals for OUC.

I won't put it down in writing just in case it changes between now and then, however, we're looking at something in the neighborhood of 7 percent by 2013 for our renewable energy goal and just under half a percent for conservation. So we figure it's better to just go ahead, do the math, figure out what we can do for our customers now, and put it out there. If it changes because of regulation, that's fine, but we're able to accomplish this goal that we've set for ourselves without any major rate increases. So I think that's an important point to make is that we think we can achieve 7 percent without any additional major rate increases.

So what are the technologies that we're particularly looking at? We've decided to focus on two types of renewables. One is biomass and the other is solar. On the biomass side, there are a number of different resources that we are looking at. Landfill gas, which I'll talk more about, has been the least cost option for us, so we're pursuing that whenever possible. Municipal solid waste is also something that we're investigating, but we're also looking at things like biomass residues, like forest residues or paper mill residues. In addition to investigating what we can do

with energy crops, specifically, we're taking a close look at algae. We think there's a lot of promise there. Something that can be locally produced very quickly. On the technology side, to convert that energy, we're looking at things like gasification, coal firing of traditional fuels, and anaerobic digestion on really wet fuels. On the solar side, we are looking at the gamet. We are trying to cover photovoltaics, solar hot water, and concentrating solar, and we have projects in all three of those areas in the solar.

So starting off with biomass. Some of the benefits that we've found to biomass is that there are options to coal fire in our existing coal boilers. We just finished up a study that showed that we could coal fire up to 10 percent biomass in our boilers pending that we can get the fuel and get some long term contracts. But knowing that we can do it is the first step and we're very excited to have found that out through a study we just completed. It is a carbon neutral fuel and it can contribute to our baseline, which is very important for our customers, and it will offset coal. It does create local jobs in the creation of the feedstock itself and processing, so we think that's a great thing and it is relatively low cost if you compare it to solar.

Some of the challenges that we're facing, as Jim

mentioned, it is baby coal, meaning that it's a lower BTU value, and it's got a lower density. I mean, you can look at a piece of coal and it's pretty solid and it's going to provide a high BTU content for that piece of coal. But if you put the same amount of wood chips in your hand, obviously, it's less dense and it has a higher moisture content than the coal. You can feel that with your hands. So our boilers have to accommodate that. And there are a number of different things we're looking at to accommodate those challenges. There is also the competing uses for bio feedstock. Obviously, the transportation industry is pursuing bio feedstock and it's also used for things like mulching and sent overseas for heating purposes in Europe. So how cheap can you get it if there are a lot of other competitors going for the feedstock? The other thing we learned with biomass is that the vendors that sell the biomass are not used to doing long term deals. The contracts we're seeing are in the neighborhood of one to three years and they can be seasonally disrupted, so that's a little bit of a challenge from a planning perspective. So we're trying to figure out how to overcome that particular barrier. And then uncertain availability. Again, you are at the mercy of mother nature with bioscopes, so there are some challenges

there on uncertain availability if there's a bad year or if something happens in the market to divert that fuel away. So that's a challenge that you have to try to mitigate with long term contracts.

Handling challenges can also be difficult. One of the things we're looking at is, if we do 10 percent, that's 90 megawatts of biomass fuel in our boiler. How do we get 90 megawatts worth of fuel to our facilities? It's a real challenge. That's a lot of biomass. Hundreds of trucks a day potentially. On the landfill side, this is something that we've been quite successful with. We've had already in place for several years a 10 megawatt landfill gas project at the Orange County landfill. We're getting ready to expand that to 22 megawatts, and I will go through those projects in a minute. 24 hours a day that's available to us and it's extremely low cost. It's cheaper than natural gas for us. So anytime we can pursue a resource like that, we absolutely will and we are. It does have a lower BTU value than natural gas and it does often need to be cleaned, so there are some additional costs there to keep from corroding our boilers. And then again, it's location specific. You don't have landfills everywhere, so, therefore, landfill gas is not available everywhere.

On the thermal and electric sides for solar, some

of the benefits are the fact that you are hedging your pricing. There are no fuel costs. So once it's in place, it's in place for 30 years. It is carbon free and it can be distributed near the user. That does take some changes to our infrastructure, but these are changes that we're working toward and that can be accommodated. Thermal is definitely a low cost option and it's something that we are pursuing with vigor, and they do create local jobs because it does require labor to install and maintain these systems. Some of the challenges is, until we really figure out some of the key factors for integrating these technologies into our grids via smart grid or other methods, they're not typically dispatchable. They are relatively predictable, but not necessarily dispatchable. So we can't always have it exactly when we need it, and that's a bit of a challenge for us. It's not something that comes with any of the other fuels that we're currently using.

And on the PV side, it is still pretty expensive compared with what we're using right now. So without a carbon tax or something to increase the cost of our conventional fuels, it's a little bit difficult for us to justify purchasing large amounts of capacity of solar and raising the rates of our customers accordingly. And

then, right now, PV -- at least thermal does a little bit on the winter side if you're using your hot water heater, but PV does not have a huge impact to our winter peak, so we still have the challenges of building enough power plants to meet our maximum loads, and that's how we design power plants is, whatever point along the way of the year is your maximum load, that's what we have to build a power plant to accommodate. So that's a little bit of a challenge.

So talking about that, what I have done for you is pulled up two of our peak days for the year. This is our summer peak day from last year. This is June 22. And you can see how we met our peak day. We used primarily coal. You can see the three bars that sort of move, but they're about the same thickness. That's because those coal plants, once you ramp them up, they're running 24 hours a day. So mostly coal, with a mix of landfill gas in there, and then at the top, you'll see that we ramp up our natural gas as needed to meet our peak day. This is, again, in the summer. You can see we're peeking right around 4:00 p.m. So that is how we're going to design our power plants to meet that peak of around 4:00 p.m. At the bottom there, we've got a few at our Indian River site that can be mixed with distillate fuels, liquid fuels, or gas fuels.

So what happens if you add renewables into the mix? So what I did was I modeled for you 100 megawatts of PV. Right now, we have about 12 megawatts of PV installed on our grid, but just for the purposes of discussion today, I went ahead and modeled what it would look like for 100 megawatts of PV on this particular day with an average profile for a PV system. So if we were to add that -- is there a way to go backwards?

So here's what it was before. I didn't touch the peak. Everything's going to look the same, it's just that some of it's going to be covered differently. And here's where we are now. So you can see that the offset is mostly going to be on the oil and natural gas side for solar. It's going to come in from the shoulder a little earlier in the day because it's going to peak at like 1 o'clock, 2 o'clock. But it will make a contribution of about 25 percent of its rate of capacity. So that means about 350 of those, or, I'm sorry, about 35 of that 100 megawatts will be available to us at our peak period. So when we do our system cleaning and our long term planning, we have to make sure that if we put in a hundred megawatts of solar, we have to derate it to 35 megawatts of solar unless we have some type of storage mechanism because that's what we'll actually get it at. So you sort of have to

overbuild solar in your planning process. It's doable. You can see that it's made a significant contribution to our natural gas, but, again, that's about 35 percent of its rated output. So just something to keep in mind.

On the biogas side, we can definitely offset natural gas, and I've pointed to that here. And on the biomass coal firing side, there is three ribbons, if you will, of coal can all be coal fired opportunities for us. So those are the kind of things that we're looking at and these are the ways that we have to work to incorporate it into our daily ability to provide you with electricity.

Again, I'll do the same thing for wintertime. You can see in the winter we have a little more of a challenge in using solar particularly. Our peak is right around 8 o'clock, and then we have another peak at right around 10 o'clock in the evening. So a little bit different, a little challenging for us to utilize renewables. So in the winter, we're probably going to rely more on biomass fuels. You can see there that the PV contribution is sort of occurring when we need it the least. It still has a contribution, again, it still has value, but the challenge is that it's really offsetting our peak directly in the winter so we would have to make that up with some other opportunities.

So what have we done to date? One of the first things I want talk to you about is something that we're working on in a collaborative way. We really believe in community engagement and collaboration at OUC. That's what we're all about. So as a group, with the City of Orlando and Orange County, we applied for funding to figure out, well, what does it take to build a solar infrastructure in Orlando. We received a grant to do that from the U.S. Department of Energy. We're in the middle of developing numerous brainstorming sessions on different topics related to solar, as well as training courses for folks like code officials and people getting into the solar business. We want to educate, we want to learn from the stakeholders in the community and figure out, what do we need to change to make solar easier to implement in our community. So we're about halfway through that grant. And some of the things that we've accomplished to date, again, the 1 megawatt project was mentioned already, so we're excited about that one. We have a solar on schools program. We're working with FSEC on that, and one of the biggest projects on my desk right now is this 10 megawatt PV project. It will be built on OUC's site and we'll have a power purchase agreement because that makes the most sense for OUC is not to own it but to let the investors get the benefit.

We will have that built hopefully by the end of 2010, and if you look at our 10 megawatts plus some of the other stuff that we've got with solar on a per capita basis and compare us with FP&L and what they're building, we're tied. So I feel pretty good about that. So sort of a mini muni. We have selected our vendor. That will be announced on March 9. So we're very excited to move forward with this project.

We also offer programs for our customers directly. Right now, we have over 300 customers signed up for our solar programs. That's solar hot water and PV, and we decided to go with a different trek. A lot of people were really pushing feed-in tariffs. We looked at that model, and for our market, it didn't make sense. So we went with something that's similar to a feed-in tariff but it's called a production incentive, and it's on the customer side of the meter. So they get the full demand savings, which you don't get on the feed-in tariff, and they get a payment per kilowatt hour. So we used both. We also offered a loan program, because what we heard from our customers is that the upfront costs were a challenge for them. So that's how we addressed it. So we offered 3 cents per kilowatt hour equivalent for solar hot water systems, and we offered 5 cents per kilowatt hour for a PV system. That's on top of net

metering. So you get net metering plus 5 cents, and you get 5 cents on everything you produce whether you are using it at your home or feeding it back to OUC. Additionally, there are some costs associated with this program because we have to measure and verify the production of these systems in order to pay you. There are some extra metering costs that have been a challenge for us with this program, so at the moment we're offering a $250 credit to compensate for that cost of installing the BTU meter. We may be changing this program as the market changes, and we have found if I roll all my costs into this program, it costs me about 10 cents a kilowatt hour to get this solar, whereas, the contract we're negotiating right now for our PV project is about 19 cents. So for me, this is the least cost option to pursue solar in my service territory. So for the loan program, these are the current rates we have. You can see they're pretty competitive. We start at 0 percent for solar hot water and 2 percent for PV.

Some of the biomass projects I mentioned earlier, we have one landfill project completed, and that one's growing, and then we have two additional landfill projects we're working on right now. So anytime we see a landfill, we get very excited and we go after it. So nobody likes trash like me. So right now we're going to

be adding another 16 megawatts possibly of landfill gas to our mix of renewable, and we're very excited about that. On one of the projects that -- I don't know if Jim Lentz made it today. Jim, are you here today?

UNIDENTIFIED SPEAKER: He's in another meeting.

MS. SZARO: Is he? Okay. One of the projects I'm very excited about is this 5 megawatt hybrid solar biomass project. I don't know anyone else who's doing this kind of project around here, and I think it's a great project. It's a cooperative agreement with Harmony, Florida and FSU, and it uses biomass gasification and concentrating solar preheats the water to create steam at a temperature of about 250 degrees, then you use the biomass to get the rest of the way there. It's a very exciting project and OUC's really proud to be part of it.

On the MSW side of it -- I told you I love trash -- we're also looking at doing something with the City of Orlando and their waste stream. So we're looking at possibly gasifying a portion of their waste stream, and the City is working on that. We would buy the energy output from that project.

So on the horizon, we talked about some of the challenges, and I'm not the kind of person that likes to hear no, so when I see a challenge, I'm going to go

after it. And some of the things that on the solar side, obviously, the costs are challenging and the fact that we're 50 percent plus multi-family is challenging. I decided to get a little creative on the solar side. Here are two business models that I am working on right now. One of them is a community solar farm where you don't have to have it on your roof to get the benefits of net metering. You don't have to pay up front costs. OUC will go ahead and work with a developer to build a community solar farm somewhere in our territory and you buy a piece of it like a timeshare. So it would be a fixed monthly fee for the life of the contract, and so far, the calculations we've done has shown it's only 2 or 3 cents above our current retail rate. And that holds for the life of our program, and our rates probably won't hold for the life of the program. So we see a crossover with today's calculations at about year 4 or 5 with this program where you end up being cash flow positive. It does allow for a virtual net metering, which encourages conservation. So if you use less, you save more. If you have shading on your roof, you live in multi-family, you don't have an appropriate site for solar, now you can buy into solar and get all the benefits without having to make the up front investment.

On the commercial side, we wanted to do something for our commercial customers as well, so we decided why don't we try to use our buying power and we would do the same kind of thing. We would buy -- we would enter into a large conference agreement with a vendor, but the systems would go on the commercial customer's buildings and we would act as a billing agent. We would bill the customer whatever the PPA developer bills us, plus we would buy that rate down with an incentive, a production incentive, like we do for our other customers, and they would be locked into that fixed monthly rate for 20 plus years. The difference between this and a feed-in tariff, again, is that these customers retain the demand savings from those projects because they're installed on their side of the meter and any net metering. You can't get that from a feed-in tariff. It's a little bit of a different model, and they don't have any up front costs to participate in this program. The six customers we've chosen to pilot this with will all be cash flow positive in year 1 or year 2 with this program.

And some things I'm doing on the biomass front. I have two projects I'm currently working on. One, I mentioned, the coal firing opportunities, and within that, we're looking at innovative ways of dealing with the feedstock transportation, such as using rail cars to

ship biomass long distances. What we find is a lot of the forestry products are in north Florida. We're in Central Florida. So is it possible to use our coal rail to ship biomass instead of coal. That's something that we're looking at. Then there's a process that is used often in the charcoal industry, which is called torrefaction, and you take that and basically burn the wood a little bit to get some of the moisture out and improve the BTU content. So that's a technology that we're looking at as well.

On the algae side, we're getting ready to put in a grant application to look and see if we can use waste water to grow algae, to use carbon dioxide to feed the algae, make it big and happy, and then withdraw the algae from the clean water and crack it to obtain both biofuels and biomass, and then coal fire that biomass with our coal.

So those are the types of projects that we think are innovative and maybe we'll overcome some of the barriers that we're experiencing in the utility industry.

If you have any questions, here's my contact information, and I am all wrapped up.

MS. CHADWICK: We have five minutes or so for Q&A because I believe a speaker is not going to make it,

which does actually give us a little bit of breathing room. So if you would like to ask a couple quick questions of Jennifer, I'm going to go double check on the speaker real quick. Feel free, but please go to the mic.

All right. Yeah, we do have some time if you'd like. If not, what we'll do is go ahead and move on to our next set of speakers, and then we'll have another time for a little networking break hear in a little bit, because some folks were asking if we could have some more networking time, so --

UNIDENTIFIED SPEAKER: Jennifer, with your 7 percent by 2013 with the 10 megawatt project in mind, where are you guys at right now?

MS. SZARO: Okay. Without the 10 megawatt project, we're at 2 percent, so we're going to be increasing by 3 and a half times what we have now over the next couple years. With the 10 megawatt, I think that will bump us to like 2.8 percent.

UNIDENTIFIED SPEAKER: Okay. So by 2013, you expect to be 7 percent solar?

MS. SZARO: We have a separate goal of 15 megawatts by 2013 just for solar, which we are well on our way to meeting.

UNIDENTIFIED SPEAKER: Thanks.

MS. SZARO: Any other questions? You all are quiet. All right.

MR. LEWIS: Jennifer, can I -- Jennifer, I think you mentioned that you are -- it's an internal 7 percent by 2013?

MS. SZARO: 7 percent, right.

MR. LEWIS: What would OUC have to do to meet a goal of 20 percent by 2020?

MS. SZARO: A lot more.

MR. LEWIS: Is that feasible? Would that be feasible?

MS. SZARO: Well, we're investigating that right now, and, you know, our analysts wanted to get us to this first step first and see what we could -- basically, we challenged ourselves to see what we could do without really making a big rate impact, and we found that this is what we can do in the near term without having a rate impact. So can we get to 20 percent by 2020? Possibly. I think we can definitely get there from a technology standpoint, but at what cost. That's what we're trying to determine. The challenge to doing any kind of utility planning is that the technologies are changing so fast that you kind of have to go back and revise your forecast like every two days. So it's a little bit challenging to just put your -- you know,

your finger on that number and -- but from a technical standpoint, yes, I do think it's feasible. What will it cost us, though.

MR. LEWIS: Do you think that 7 percent by 2013 ought to be feasible for any utility company?

MS. SZARO: I cannot speak for other utilities because every utility has their own set of circumstances, and theirs may not be like ours, and I wouldn't want to do that to another utility just because it's very possible that they're just in a completely different circumstance than we are. I mean, it's possible for us.

MR. LEWIS: I was just looking for something that I could go to other utility companies and say, Jennifer said you could do this.

MS. SZARO: I'm on to you. I think that it -- you know, there are definitely possibilities to expanding renewables, and, again, we are an energy service company. We provide energy to our customers. We're not going to rule out anything if it makes sense for the customers, and so if in 20 years we're all renewable, we're still an energy service company, we'll just change our fuel mix. And that's a good thing. That's progress.

Any other questions?

UNIDENTIFIED SPEAKER: I've got one. Jennifer, I applaud OUC for all the partnerships that they do, especially with the public sector. We do that with Orange County as well. One of the things, though, we get internally sometimes is the perspective of how we -- because we are in the public sector, that with the fairness of dealing with OUC versus some of the other utilities that are in our environment. How do you all address that? Is that a concern for you? We know it's a concern internally, especially on our operations sides.

MS. SZARO: Right. I mean, I -- you know, as the County, I understand that you are served by two different utility companies. I understand that. Well, technically three maybe even. And all we can do is offer our best opportunity to you as our customers, and we can't really pressure or speak to what other utilities offer you. You can take our opportunities or not take our opportunities. But, again, it's really not something that I can control as to what the other utilities are doing. Generally, we do try to collaborate as utilities and find common ground and find ways to work together whenever possible. So if it's possible to work together with a utility on a particular project, we certainly jump at that chance, especially if

there are cost savings involved or efficiencies of scale. So, again, I hear what you're saying and, you know, unfortunately, I can't control what other utilities programs are being offered to you.

MS. CHADWICK: Thank you, Jennifer.

Okay. Our next session is actually a panel, and it is the perspective of the builders, and, Robyn, if you want to come on up. While Robyn is heading up, I'm going to introduce her, and then she, in turn, will introduce the panelists which she graciously brought together for the forum here today.

Robyn Dowsey is a member of the facility design and construction department for Wharton Smith and is also a leading accredited professional with specialties in green building design and construction. Robyn currently serves as the vice chair of the board for the Central Florida chapter of the U.S. Green Building Council and is an education course reviewer for the US GBC National. Robyn has more than 16 years of experience in construction planning, management and project delivery. Robyn is very involved in providing support and education to the Central Florida community. She works with the community in helping them to better understand sustainable concepts and delivery methods focused on integrated project delivery and how to maximize, utilize

and implement sustainable technologies. And near to my heart is a mother of young children, and is involved with education and in helping school districts implement technologies that aid in reducing their operational budgets while improving the school conditions and overall qualities for students and faculty.

I thought it would be interesting to hear the builders' perspective on RPS because so much of our economy here in Florida is based on development, and developers are integral to that, and as much as this -- an RPS policy would impact the utilities in a big way, it will most definitely impact the development community as well.

So with that, Robyn?

MS. DOWSEY: Okay. So I have the pleasure of introducing your panel to you. I'm going to introduce them briefly and then I'm going to give them a couple minutes before I start asking questions to allow them to elaborate a little bit more with regard to what they do here in Central Florida. And after we are done with the questions that we are going to ask, I encourage those in the audience to pose their own questions to the panel.

So first, David Bessette. David Bessette is the CEO and president of All Solar Service Company. He was the past president of the Florida Solar Energy

Industries Association. He is a CEU instructor and he puts subject matter together for Professional Testing Institute.

Chris Maingot is the operations director for Superior Solar. He also sat on the board for the Florida Solar Energy Industries Association and he writes exam questions for the North American Board of Certified Energy Practitioners.

Kimberly, I'm going to ruin your name, sorry. Kimberly Krutski has three years experience in environmental engineering. She specializes in photovoltaic system design and she has been project manager for approximately six megawatts of photovoltaics.

So have a seat, and, David, could you start us off by elaborating a little bit more on what I started.

MR. BESSETTE: I am a small business owner with 30 some employees. I've been installing solar water heating thermal systems, pool heating and PV for over 30 years in Central Florida. I have been involved with the Solar Industries Association for a decade, presided over the industry for three out of the last seven years, and am uniquely in tune with what's going on in Tallahassee, as best you can. I have a passion for solar. It's been my life. I think that solar can play in the mix with

the fuels here in Florida. We are the sunshine state. I really would like to see if we can get some good questions come out here today, but one of the big things for me as a small business owner, whatever policy that we come up with in the state of Florida, I believe, for one, we have to create jobs for Floridians, and since Floridians will be footing the bill to the rate payers or through tax base, I think it's important to keep the jobs here and keep the money within the state, and I really would like to see the RPS, see the state of Florida come up with a RPS prior to the feds coming up with a RPS. The feds do not see any boundaries as far as the state's concerned. I think it would be best for Floridians to have an RPS here in the state. Of course, there is other policies out there, but I'm all about bringing clean renewable energy such as solar to Floridians. It does work and there's many good examples of it, and it is cost effective today.

MS. DOWSEY: Thank you. Kimberly?

MS. KRUTSKI: Good morning. I work for Blue-Chip Energy. We currently install residential and commercial solar energy systems. We are in negotiations with PPA agreements for local schools and other government entities. Our company is about 30 people. And the RPS is definitely going to increase business, so we're

pushing forward for that. Hopefully by April 2nd, we'll have some legislative issues passed and RPS will be in full effect.

MS. DOWSEY: Great. Chris?

MR. MAINGOT: Hi. I started in this business as an installer a little over 20 years ago. I work for a local contractor here in Orlando. Like Dave, I've been in the FSEIA board for the past three years, and I've been in our legislative chair for the past three years. So I've been involved in all our lobbying efforts in Tallahassee to get legislation such as RPS and other forms of legislation to benefit the industry, to grow the industry here in Florida. We have -- you know, like Dr. Fenton said, we've got a unique opportunity here in Florida. We have, you know, a lot more solar energy than a lot of other states, but we lag the rest of the country or the majority of the rest of the country in solar programs. So we need to start making up for that. And I'm, you know, optimstic about this year's legislative session. I think we are going to see a change in the House leadership, you know, wanting to do some more stuff, and we see some stuff coming out, some bills that are going to be probably coming out of the House and the Senate that are encouraging. I know that they don't want to raise taxes to the constituents of

Florida, but we have to find a way to move solar industry forward and to move RPS and other renewables forward. So with that, I'm going to turn it back to Robyn.

MS. DOWSEY: Okay. So all of us have touched on jobs and making Central Florida as a community strong. So the first question that I would like to ask the panel is that, how do the goals of a renewable portfolio standard from our level do that? How do they create jobs and how do they infuse our community if we are going ahead and just gently raising the costs here on the individual person?

MR. MAINGOT: Well, an RPS is geared mainly towards large utility scale systems, so you will get jobs, but with large utility scale systems, especially in Florida, we really don't have -- the contractors in Florida don't have the solar experience to be doing large utility sales systems yet. We're working towards those ends, so a lot of these, you know, are going to be jobs -- jobs will be created, but a lot of them will be temporary jobs. A lot of jobs are going to be companies coming in from out of state to do these very large projects. We need to see some kind of component for distributed generation in there, and Dr. Fenton touched briefly on it. Unless there's a distributed generation portion to

the RPS, we're not going to create permanent jobs and we're not going to grow the industry like we could. So there needs to be some sort of carve out, I believe, for a distributed generation in an RPS that will allow the local contractors to gain the experience necessary to do some of these bigger jobs.

MS. DOWSEY: David?

MR. BESSETTE: Well, my take on the renewable portfolio standards is that, just like Chris was saying, large solar farms is good, but I also heard that we created 5,000 jobs to do a project or projects with FP&L. Those 5,000 people are probably looking for jobs right now. So although it does create jobs, it creates jobs on large solar farms just for the short term. What I would like to see is put the solar on the rooftops. Let the building owners benefit from it and feed it into the grid which is needed. So we have a lot of rooftops here, and that's what we have a lot of, and they're just sitting up there soaking up the sun. So as far as distributive, I'd like to see onsite generation of solar energy. If those folks are paying -- going to pay the tab, let them benefit from it, whether it be a building owner or commercial building or whether it be a homeowner. The homeowner should have the renewable energy resource on their house. Jennifer and I go back

a long ways. I have dealt with Progress Energy, FP&L, and I hear what they're trying to do, and what they would like to do is build large solar farms. But the reality of the situation in my perspective is, put it onsite, get it on the rooftops, and if Floridians are paying for it, then they ought to be able to benefit from it directly. Job growth. That's what I just referred to earlier with job growth. There is job growth and job creation to putting it on homes and buildings. It's a lot more sustainable than just building large solar farms. Now, that's what my biggest -- what I would like to see most is job creation and, you know, I'm being redundant here, but in my experience of 30 years, I can put a lot more people to work if we're doing it on our personal homes and if we're doing it on buildings than we are building solar farms, and there is a more direct affect for those homeowners, more beneficial for homeowners to have it on the roof than it is to pay for programs -- through programs to build solar farms. First of all, you get charged to build a farm, and then what's your benefit. I think we need to get on the customers' side of the meter and deal with it that way. With that, I'll just pass it on.

MS. KRUTSKI: I agree with David. The RPS is going to create jobs on a smaller scale at first. It's going

to push for more statewide incentives. Get the residential and commercial customers up and running, and then we'll be able to touch on the solar farms and jobs -- the jobs for the solar farms will be people that have been in the industry for 10, 15 years, and that's coming from California or other states that have been set up with an RPS.

MS. DOWSEY: Thank you. David mentioned and Dr. Fenton mentioned about putting PV up on top of schools. And David mentioned how we don't have enough qualified people here in Central Florida to go ahead and do PV installations of large magnitudes. How do we -- how will an RPS, if at all, help us educate our youth with regard to these renewable resources and these renewable technologies? Will that added market to Florida actually perpetuate some learning curriculum that will support and allow the industry to grow?

MR. MAINGOT: Well, I think, you know, we're talking about distributed generation here, but there's a need for both. There's a need for large scale and small scale. There has to be a balance. And if we have an RPS, and we're already starting to see solar in homes and businesses, not as much as we would like, but, you know -- and there is going to be a natural move to push this into -- especially with the programs that FSEC and

with the stimulus dollars we're getting for solar for schools and there's other solar programs through stimulus money, we are starting to see it move into the schools. We're starting to see education in a lot of schools. A school right next to our office, Lyman High School, has a solar system on it. It is part of their curriculum right now. These students learn about the solar system on their school, and as we start to see big farms like the 110 megawatts that FP&L has done and some other projects, it is going to be part of our education system. They are going to have to start learning about solar moving forward. So as we build, it will move into the school system, and it has already started doing that, and the federal government is giving us money to help with that through the stimulus program.

MR. BESSETTE: I have had the opportunity to install through the Sunwide for Schools five different school systems that All Solar, my company, has been able to install. I appreciate the efforts and the monies coming down to educate the young folks. I think the young people get it. I just don't think the legislators do. I think it was said that the 10 year olds, it might be easier to talk to the 10 year olds than it is the 50 year olds. It's their future. And there was a clip in the Orlando Sentinel I clipped out, and I sent it to my

daughter who just had a child, and it showed a doctor holding up the child, and it was crying, mouth wide open, and the nurse said, well, why is it crying so hard? And the doctor said, well, it just found out what its share of the national debt was. You know, well, to move forward -- and I was speaking to others earlier, and I asked a question about the House of Representatives. Why aren't they on board. The fact of the matter is we have no visionaries and we lack leadership. We have to look forward, not to today, and it was said before, every time I hear about solar, they say when is the payback. When is the payback. Well, you've got to look on the back end. If we don't do it, what is the cost going to be then. It's going to be astronomical. Globally, proliferation of solar globally. China, talk about Chinese. They're going to own our marketplace. If we don't bring in and the state does not come up with a strong renewable portfolio standard, we will always buy from other folks. Floridians will always be dependent on foreign oil or foreign manufactured products that we'll eventually wake up and see that we need. So we need to come up with a way. I've talked to people, manufacturers from Sarasota (sic.), from other manufacturers that would love to come to Florida. Everybody talks about this 30,000 foot

view. These folks aren't even at 30,000 feet with Florida. They're circling New Jersey and California and those places where they can land to put their plants. They're looking at New Jersey right now. They would love to be in Florida. It's a better distribution for them for the Caribbean and South America. We've got to get outside of the box here. Get to the legislators and let them know. I hear -- like I said, I was a president and I've heard all of the legislative committee meetings and all the different folks, and you've got a meeting here, and you've got a symposium over there, and it's all rhetoric, it's just rhetoric. The problem is is that what we may need to do and what I would like to propose is to do a referendum. Take it out of the legislators' hands, because they don't have the vision, and they think if they put a tax, this might be considered a tax on the citizens, and that would be political suicide. They may not want to do it. So the citizens of Florida need to put -- in my opinion, need to put a referendum together, take it out of legislators and put it on the ballot, because I've heard over and over again, I hear people say every single day, hey, solar's a great idea. I might do it someday. You know, I don't ever hear somebody say, hey, solar's a bad idea, that's the worst thing. It pollutes, it's going to

kill, it's -- you know, it's a great idea. We have sunshine, a lot of it here. So I would like to impose to you folks out there to even think about putting a referendum together and show the -- show Tallahassee that we have the vision and we're willing to take the risk. Now, we can all talk -- like I just said, we can all talk about this RPS, and I want to continue to talk about it, but I think we need to go forward and do something that the legislators can't do themselves.

MS. KRUTSKI: I agree with Chris and David on how we're going to educate the youth. It's -- you know, the solar energy systems at the schools are going to be part of the curriculum in the future. And like David stated, it's easier to educate a 10 year old than it is a 50 year old. Renewable energy just makes sense. It generates savings, no pollution, and I think the youth of America are going to see the greener side of things.

MS. DOWSEY: Kimberly, I live -- I get so excited, because I decided to put a solar thermal system on top of my house, solar water system, and I live, unfortunately, in an area that is governed by a co-op. So when I went to them and told them about my bright idea, they pretty much said, well, that's nice, but it's not going to help you any with us. So would an RPS address that with co-ops?

MS. KRUTSKI: Co-ops are not required by the RPS right now. They're not an investor owned utility, they're not required to be renewable, so you would have to negotiate a term price with them. Right now, they're buying energy fed into the grids, and most of them do have net metering set up, but half of them do not, and the cost is the cost minus the energy cost minus the fuel cost, which is at 6 cents on average.

MS. DOWSEY: So is there anything we can do to address those that do not live -- that do not have an investor owned utility company?

MR. BESSETTE: Move.

MS. DOWSEY: Okay. That works. Sorry, Lake County.

MR. MAINGOT: Well, the legislature would have to direct it, and the legislature did in 7135 direct the co-ops to adopt net metering similar to what the IOUs did, so the legislature has the power to say you guys need to get on board. So that's where it would have to come from, the legislator, for the co-ops. And some of them are progressive like Jennifer and OUC and some of them are not as progressive. But for the most part, I would say the munis and the co-ops have had better programs before the IOUs had programs in place. So for the most part, the munis and the co-ops are kind of

leading the way, and OUC is -- I think OUC and JEA probably have the best policies in the state when it comes to solar programs, so --

MS. DOWSEY: We talked a little bit about 1154, and when we talk about a renewable portfolio, we talk mostly about solar and talk a little bit more about clean energy and how that plays into an RPS.

MR. BESSETTE: It was said earlier that in order -- well, let me just backup for a second. I think the mind set is whatever it takes to get off of foreign oil. I think that's what we have to look at. And within that mind set, there's going to be a mix, there's going to be nuclear, there's going to be coal, there's going to be clean coal, there's going to be gas, there's going to be solar, there's going to be wind, there's going to be biomass, there's going to be all of it. So in my opinion, I don't -- I'm not saying that solar is the caveat. It's not the answer to all of it. But I think whatever it takes to get off of the dependence on others and other states for our coal or foreign oil, and I just want to address it in that vein, is that the idea is to bring it on. If we have something clean, it's non-polluting and it's readily available, then I say we should go for it and get everybody in the mix.

MR. MAINGOT: What was the question again?

Clean technologies is part of the RPS. Yeah, we need a mix, and, in Florida, we do have a good mix. You know, we have biomass is definitely a viable -- probably biomass and solar are probably the two most viable alternatives in Florida. I mean, algae has promise. You know, a lot of people are looking into algae. You know, there's waste heat is another one. I mean, we have -- you know, one of our large fertilizer manufacturers here in Florida produces a lot of waste heat. So, I mean, that's another viable technology. When you say, clean, you know, I -- again, that -- I get a little offended by that sometimes because people like to put nuclear and clean, and nuclear is -- I don't know. I think we have a need for nuclear, but I wouldn't categorize it as clean. So, you know, there are a lot of other technologies that we can use in our RPS in Florida other than solar that, you know, could play major contributions to the RPS, have a major contribution to the RPS.

MS. DOWSEY: Without distribution, with just the farms and the utility companies, how do you see that having an affect financially on the construction market and the building market, if at all, here in Central Florida?

MR. MAINGOT: Without distributed generation?

MS. DOWSEY: Uh-huh. Just as it's being posed right now. Do you see that having a negative or positive or a neutral affect on the building industry and the construction industry here?

MR. MAINGOT: I wouldn't say it would be -- I don't think it would be a very positive affect. I think distributed generation would be necessary to be able to -- because most of the builders are going to do small to medium sized commercial systems, residential systems, stuff like that. You know, without programs that take that into account, I don't think that the builders would be -- and the financial -- I mean, you need -- you know, for the financial thing, you need long term contracts, 20 to -- you know, 15, 20 years so that you can get, encourage private monies to come in, and, you know, if somebody has a 15 or 20 year contract with a utility, you know, private lending would come into place because they see a secure contract. So, you know, the private bankers and, you know, the money people would come into Florida and create a marketplace basically, because we need the financial people here to create a marketplace. Without them, we're not going to have one. But you need -- for the builders, we need to have that distributed generation as part of the mix. I'm not saying it would be nothing, but if we had an RPS with just strictly

large systems, it would be a little bit, but I don't see it affecting the builders in a very positive way.

MS. KRUTSKI: I think that it would have a negative affect on it if there was no distributed generation, because, you know, the return of investment would be a little bit longer. It would take years, over 10, 20 years, for these residential systems to get back the money they paid for the system and the net metering, plus that OUC offers -- gives a 5 year return of investment. It just makes business sense for these residential customers to buy the system.

MS. DOWSEY: So what other financial mechanisms can we put in place to augment or to help the RPS that you see?

Don't fight over not answering the question. You have to argue over answering it.

MR. BESSETTE: No, I -- well, could you --

MS. DOWSEY: Rephrase it?

MR. BESSETTE: Yes.

MS. DOWSEY: What financial mechanisms need to be put in place to build a sustainable RPS program that will actually function and work?

MR. BESSETTE: Well, I think we could do what I would consider a public benefit fund. I think it was brought up earlier. I think if our public benefit fund

was tied to that where all the Floridians were paid or pay into it, I think the return on their investment over the long haul -- well, not even the long haul depending on where the utility rates are going, but I think if we did a public benefit fund where everyone paid into it, then everybody could benefit from it. That would spur on the investors to come in to provide the funding that's going to be needed, because behind every good idea, you're going to need to have some type of funding source, but this would be kind of self funding, too. It's -- in my opinion, when you come to funding this, it's almost like the cost recovery fund utilities collect buried within your utility bill where billions are dollars are collected. These monies could be also spent for folks, for Floridians to install the systems on their homes and on their buildings. So I think it could come from a public benefit fund. But, again, you run the risk of calling it a tax. But I like the sin tax. That was a great idea. We could call it a sin tax. So I'm all for that.

MS. DOWSEY: We're running out of time, so I want to open questions to the floor for the panel. Does anyone have a question for the panel?

UNIDENTIFIED SPEAKER: First of all, let me thank -- I'm an OUC customer, so I want to thank Jennifer for

the customers and, of course, Dr. Fenton. We were talking about funding this. There is plenty of money, and I think this is being discussed already, in the pension fund, and at 2.5 gigawatts at today's prices, I believe that would be about 10 billion a year that they would have to invest. That's probably peanuts for some of these pension funds. So I think probably 2.5 gigawatts of just PV would probably be justifiable. Although maybe some ears don't want to hear that, but I think -- that's my opinion here.

MS. DOWSEY: Any pension fund presidents in the room?

No, huh.

Any other questions? You can come right up to the podium.

UNIDENTIFIED SPEAKER: This is a question that is probably a small piece of the whole program here, but because you are contractors, we always address this internally in our public sector. Putting PV's on roofs, it's very frowned on. Our roofs are -- we have a portfolio that's, you know, 30, 40 years old in some cases. Some new building structures are not there for it. So there is this struggle internally. Do we put PV on roofs or do you not? We have over a million square feet in the county of roof space, and the energy

efficiency side of our organization says, put them on the roofs, and the operations side says, no, because you don't want to increase your leak rate, your maintenance and other things. What is your philosophy or approach to putting PV on roofs, builders and owners that say they don't want them on roofs?

MS. KRUTSKI: Well, there's new technology right now that is offered on racking systems that don't penetrate roofs, and that's being widely used by some of the schools because they have a lot of concerns about maintenance as well, and we've been using those racking systems.

UNIDENTIFIED SPEAKER: Is it findable on the websites?

MS. DOWSEY: Yes. Self balancing systems, I think, is what she's talking about. In addition to that, I think that with everything having to do with sustainability, renewable energy as well, not everything is applicable to every situation. So just because we say, put it on roofs, doesn't mean every single solitary roof here in Central Florida needs to have a PV system on it. Some situations it makes sense, and some not so much.

MR. BESSETTE: From a contractor's point of view, you have a lot of roof penetrations on your commercial

roofs and in your homes. You have air handlers on commercial roofs. There's a lot of penetrations. If you install it properly, you're not going to have a problem. And there is engineering that will meet the Florida building codes and the wind code, so I don't see leaking as a problem. Now, you've heard that leaking -- anybody that's a facilities manager, that's what his concern is, but that concern can be easily overcome by getting a warranty or getting a roofer involved, whatever you have to do, seal up that roof properly, give the warranty on it and move on. That's my opinion.

MR. MAINGOT: Yeah. I mean, roof spaces are -- you know, a lot of commercial buildings, we have a lot of commercial buildings, you can put, you know, 50, 100 KW systems. We got quite a few commercial buildings we could put PV on. Not every residence is perfectly sited for, you know, large PV, but, I mean, most residences, you can get at least 2 to 5 KW on, and we have a lot of good available. I mean, we're not going to have -- when Navigant did their study, they -- and supported rooftops in their study as part of the PV mix. We won't get there just by available land or usable land. We will not. So we have to use rooftops. So that's -- you know, rooftops are -- I mean, like Dave says, if you got the right contractors involved, it's not an issue. We

have -- you know, we have very few problems with roof leaks. I mean, compared to the amount of work we do, it's less than 1 percent of the jobs we do that have roof leaks. Nobody's perfect. You know, we're all human beings so we make mistakes occasionally, but roof leaks are not a big hold back to moving PV forward, I don't think.

MS. DOWSEY: Well, Chris, I'm getting the hook, so let me just take a minute to thank the panel for coming. Thank you very much.

MR. LEWIS: Is there one or two quick questions that could be answered quickly?

MS. DOWSEY: Are there anymore questions we can ask really quickly?

Go ahead.

UNIDENTIFIED SPEAKER: Just a quick question. How do you -- how do you write this carve out into the RPS of distributed generation?

MS. DOWSEY: How do you write this carve out into the RPS?

UNIDENTIFIED SPEAKER: For distributed generation.

MR. MAINGOT: Well, you just got to get the legislators to cooperate with us. Arizona is a perfect example. 30 percent of their RPS has to be from mid to small size commercial and residential. So they've

written it into their RPS where you have to have a certain portion dedicated to distributed generation. So we can borrow from other states that have, you know, put these things -- not every -- I mean, a lot of states don't have it as part of their thing, but it's very easy for us to write it in. You just got to get the legislators to cooperate.

UNIDENTIFIED SPEAKER: How does that work with a utility? Does the utility then have to lease someone's rooftop to put up the PV?

MR. MAINGOT: No. I mean, you can be working directly with the owners of the building. I mean, you know, there's a utility -- a lot of -- like with OUC, they can't take advantage of the federal tax credits because they're not for profit, so what they do is they enter into a PPA agreement with somebody who can take advantage of it. Some of the other utilities, like the IOUs, can take advantage of it, though, and get the federal tax credit. But in a lot of cases, you know, you'll be doing -- in the state of Florida, PPA's are only legal if you're working with a utility. It is not -- I can't put a system on your roof and sell you the power. That's not legal in Florida. So you have to work with a utility if you do a PPA. So, I mean, there -- you know, there is -- I wish that law would change,

and maybe it will going forward, but until that happens, we're not going to see stuff like that.

MS. DOWSEY: One last question. Go ahead.

UNIDENTIFIED SPEAKER: There seems to be a significant weather damage concern in Florida with the insurance industry.

MS. DOWSEY: He's asking about the weather damage concern and insurance liability.

UNIDENTIFIED SPEAKER: So if we start putting these units on everybody's homes or everybody's commercial business roofs, will they be insurable, or are the owners going to be at risk? We already have trouble with insurance for homeowners in Florida on hurricane problems.

MR. BESSETTE: They are insurable. I can only cite one example. Jeff Curry with Lakeland Electric. Lakeland Electric had 60 to a hundred solar hot water heating systems installed many years ago prior to 2004. The hurricanes -- and that's -- and he's down in Lakeland. So just above Lakeland was -- in 2004, was basically the epicenter of where the three hurricanes crossed over. Just, you know, in Polk County there. He put out a report that he only had one damaged collector. And over the years, I can tell you, I mean, we have nearly 16,000 installations out there, my company does.

Very few were damaged through the hurricane. The ones that did sustain any damage at all were the pool heating panels, the plastic panels that fit on your roof. They're a little more difficult to keep from being damaged, but the other ones held up pretty good. And the durability, they use these solar panels in some of the most remote areas of the world. And so they're very durable, they're impact resistant. Will there be damage? Yes. To what extent, I can't tell you at this point in time, but very durable products.

UNIDENTIFIED SPEAKER: But you expect it to be insurable?

MR. BESSETTE: Yes.

MS. CHADWICK: We are going to have to wrap up. We have some positive but unexpected potential of guests showing up. Looks like our Governor might be popping in, believe it or not. So as you are watching me stress out up here, it's all positive, but it's kind of like, oops. So we are going to just kind of trek right along here. Unfortunately, the break I promised is obviously not going to happen because of the unexpected but great speaker who's going to pop in here whenever he's done with another meeting that he's at.

So next up, George, come on up. George is going to introduce himself. Thank you.

MR. CAVROS: Hi, everyone. Thought it would save a little time. I'll go through my presentation as quickly as I can so we can finish on time and leave some time for questions. My name is George Cavros. I work with Natural Resources Defense Council and Southern Alliance for Clean Energy. Those two organizations, we're heavily engaged in the 15 month rule making process before the Public Service Commission and advocated for a renewable energy policy, not only because of environmental benefits, but also because of the job benefits and the rate tariff protection benefits. I also want to congratulate Orange County on trying to attract clean energy investments to the county. It's a sector of the economy that has immense potential, but before we do that, we need to get the rules and regulations right at the state level. And, you know, quite frankly, Florida is at a crossroads. I mean, we're almost at 12 percent unemployment. Even the Florida Chamber of Commerce has ranked Florida slightly negative for economic development. Some of our traditional economic sectors, like construction, like development, have declined due to situations outside of our control, and legislative leaders are being asked to create new economic answers, but that at the same time, not unduly burden Floridians in the process, and the

Cleantech industry provides a real opportunity, unique opportunity, for Florida to kickstart a new economic engine, to create jobs, and also in the process to protect ratepayers as well.

This is a graph prepared by the Southern Alliance for Clean Energy, which shows the potential of over 50,000 jobs in Florida with a 20 percent renewable energy standard or renewable portfolio standard by 2020. That was based on studies by Navigant Consulting and also the University of Florida. As you can see, it's primarily a biomass and solar opportunity, which are -- which Florida is very rich in those resources.

A lot of times people ask, you know, what is a green job. And if you look at this graph, half of it is manufacturing and another quarter of it is construction and craft trade. It's almost 75 percent of green jobs have the types -- require the types of skills that our construction industry now has. Many of those folks are unemployed and they could very easily jump into the clean energy economy. They could hit the ground running and be quickly employable.

I also wanted to break it down to job potential per megawatt. Recent studies have shown that 1 megawatt of capacity of solar will create anywhere from 15 to 30 jobs. 15 is on the lower end. That's generally utility

scale solar. 30 is -- tends to be more distributed generation type solar. Also, biomass will create 9 direct jobs per megawatt of capacity. And the great thing about biomass and solar is, as it was represented earlier, the money stays in the state. 85 percent of the money spent on producing homegrown biomass stays within a 75 mile radius of the project stimulating local economies, and the same pretty much can be said with solar. It's important to note that 80 cents out of every dollar we spend on energy leaves the state, and what we need to do, as mentioned earlier by Jim, is keep those dollars in the state.

Now, there's a whole host of benefits to renewable energy. Job and economic benefits is just one. A rate impact protection for customers is another. And I kind of wanted to touch on that with you, because you often hear that renewable energy is too expensive, and I want to kind of reframe this for you a little bit.

First of all, the kilowatt hour cost of biomass is already competitive with base load generation. The problem that biomass developers have in Florida is that the contracts they're offered through power purchase agreements, the avoided cost that they have to meet is simply too low. And you'll hear this all the time from third party providers. They could not do a project at 5

cents or 4 cents a kilowatt hour. It's simply too low. I pay 12 cents, my retail rates. There's a lot of room there for negotiation with those biomass developers. I can also let you know that solar is already cost competitive with peeking plants, natural gas combustion of cycle of peeking plants. Those are the plants that the utility will turn on when its utility demand is peeking. In South Florida, it's usually about 1:00 to 4 o'clock in the summer days when those air conditioners are humming. Solar is -- it's profile is really well suited for that, and Jennifer pointed that out in her presentation. Also, conventional power has experienced spiking fuel costs in recent years and also increased capital construction costs. We've seen double digit increases in conventional power for the last few years because of that. You know, one of the reasons is that natural gas is a highly volatile fuel source. Natural gas will comprise over 54 percent of our energy mix by 2017. And, again, pointing to its high volatility, it was $10.35 cents per thousand cubic feet in 2005. It's now at about 3 and a half dollars. And while it's good that it's low, that type of volatility isn't necessarily good for customers. Also, capital construction costs of conventional energy is going up due to increases in cement and steel and the things it takes to build

conventional power plants. Just to give you an example, nuclear capital construction cost estimates have tripled from 2,500 a kilowatt capacity in 2005 to over 7,500 in 2009. And I would like to point, you know, to solar and also biomass. By contrast, renewables have -- their construction costs, or capital costs, are dropping. The price of -- per watt of peak PV solar has dropped from $27 in 1982 to about $4 today, and I will have to doublecheck with the solar folks to make sure I'm accurate on that. Sometimes you get different figures for that. Also, there is no fuel component in solar and wind, and, generally, the fuel source for biomass is pretty stable.

So renewables -- well, your energy mix is like a stock portfolio. Renewables are your staple investment. The more we can integrate them into our energy mix, the better off everybody will be. You know, basically, you have a trend line going up this way with conventional energy, you have a trend line going down in terms of cost for renewable energy. So we need to start integrating those things as soon as possible.

Also, avoided water use with renewable energy. You know, water's the life blood of Florida. Conventional power plants use a lot of water. In fact, in early 2008, there was a scare that some of the nuclear

reactors in the southeast might have to be shut down because of drought conditions because there simply wasn't enough water for the cooling requirements.

Also, grid support. We've heard that our transmission grid is old, it's going to need updating. How do you provide relief to that? One of the things you can do to reduce line losses is place distributed generation in closer proximity to demand. That reduces line loss and also mitigates the need for additional infrastructure construction. And, of course, you've got the avoided CO2 emissions benefits from solar and wind, and biomass is generally CO2 neutral.

Before I jump into renewables, I do want to -- I need to touch on efficiency. I know that Jim touched on this as well, but efficiency is your lowest cost resource to any utility. It's a well run program. It's about 2 to 4 cents a kilowatt hour. Generally, newer power is going to cost you about 12 cents a kilowatt hour. Not only that, but it helps maintain your renewable target baseline from increasing. You know, if your demand increases at the same time you're trying to get a percentage of that, of those sales from renewables, you're simply going to be chasing an ever higher baseline. And that's why 17 leading states have made a commitment to capture at least 1 percent of their

demand through energy savings. In Florida, we're not doing as well. We've recently finished a energy goal docket at the Public Service Commission. They have taken steps to increase energy savings in Florida, but we still have a long way to go. Historically, Florida's utilities have been capturing about 2/10th's of 1 percent. So other states made a commitment to capture about five times more. Also, including energy efficiency does create jobs. Jobs like heating, air conditioner installers, carpenters, roofers. Again, these are the types of people that are currently unemployed and can step in and do this work. The AC Triple E estimates we can create over 19,000 jobs in Florida just from efficiency if we were to achieve 50 percent of our demand of energy savings by 2020.

Okay. Creating a renewable energy market through an RPS. The overriding goal is two things: Transparency and certainty. Developers need that, otherwise, they won't come to the state, they won't invest. And Tommy touched on some of the major policy design components in the first presentation, but they are targets and timelines. Eligible renewable resources, they're not the same in every state. Do you want to encourage a specific resource, or do you want to encourage distributed generation. The RPS's right now

are using a renewable energy credit as a form of compliance and also a premium payment to encourage investment. Many RPS's have an investment cap or, alternatively, a compliance payment, which I'll touch on in a moment. They also have enforcement provisions, and some of them have exemptions from the RPS, and that generally goes to municipal utilities and rural cooperatives. And some of these states are not covered through an RPS.

And you may have seen a similar map to this earlier today. There are 29 states in DC and the District of Columbia who have RPS's in place right now, and the targets really vary. Arizona has 15 percent by 2025. North Carolina is only 12 and a half percent by 2021, and they can actually use 25 percent. They can meet 25 percent of their RPS through energy efficiency. And Hawaii just recently increased theirs to 40 percent by 2030. So there is really a wide diversity of target and timelines.

Same with eligible resources. Your most common are going to be wind, solar, biomass, hydro, geothermal. Some of the less common ones you're going to see, for instance, Nevada has tire waste as a renewable resource. North Carolina has swine waste. There are more pigs in North Carolina than there are people. And to them,

swine waste is a renewable resource. Same with chicken waste. About half of the states that have an RPS right now also have some kind of set aside. The set aside is sometimes called a carve out, and they have that carve out either generally for solar or also for distributed generation.

Okay. Renewable energy credits. The renewable energy credit is the currency of an RPS. It equals one megawatt hour of renewable energy. It represents that that's the value of the attribute for that renewable energy. It also represents an additional payment stream to the renewable energy developer. Right now, renewable energy developers can only get the utility's avoided cost. And by, avoided cost, I mean that's the utility's cost of providing that next incremental megawatt hour of electricity. And, generally, that's a natural gas combined cycle. Plant natural gas is low right now, so basically, it's just, you know, fuel cost. So they need that REC to give them the incentive they need. Also, REC's are usually, let's just say, tracked electronically. They can be bundled or unbundled. By bundled, I mean they can be sold with the contract with the sale of electricity, or they can be unbundled. In other words, you can have two payment streams. A developer can sell the electricity and then he can peel

off the REC's and sell them independent in other markets.

What you have in other states is you have short term trades and also long term contracting. And you can see which dominates which markets. The problem with short term contracting or short term trade is that you have a variable renewable energy credit value. You know, your REC price might be here one day, might be here another day. That doesn't create that certainty that we had talked about earlier. The same with long term contracting. You can negotiate your own long term contract, but, ultimately, you don't know what that contract price is going to be and others don't know what that contract price is going to be. So it's not very transparent.

So what a few utilities are doing, they're going to standard offer contracts. And what those are are basically an open invitation to accept a contract based on certain criteria, and it's usually done at a specified cost per kilowatt hour over a long term. For instance, Arizona Public Service offers a 10 to 15 year contract with REC prices anywhere at 20 cents a kilowatt hour and 18 cents, respectively. And as we get into these types of standard offer contracts, you are starting to approach more of a feed-in tariff type

concept. And I just wanted to touch on this because we haven't talked a lot about the feed-in tariff, but it varies by -- with the RPS in a couple ways. The standard regulates the target. A feed-in tariff regulates the price. For instance, Gainesville recently established a feed-in tariff at 32 cents a kilowatt hour. That's the price. The developers know that. That price is good for 20 years. That creates a lot of certainty. But you don't know necessarily how much renewable energy you're going to get. I mean, they have placed a cap on the program, but still the RPS tends to set the target. But you don't always know what the price is going to be and that creates a bit of uncertainty to developers entering that market. Let's see what the trends have been.

As you can see from this graph, and this is from Orange Berkeley National Laboratory, that the compliance has been pretty good. It's been up at around 90 percent in the early years. It's important to remember that a lot of these programs are new. Over half of them have been started since 2004. So some of them may have not hit their early target. But generally compliance is good. Some of them are struggling, like Arizona. Arizona has realized that the renewable energy purchases are well below 50 percent, and that's because the

specific funding amounts have been insufficient to achieve their target. California, even though they're at 94 percent today, aren't going to make 20 percent by 2010, which is what they had originally envisioned, and that's been due to a transmission constraints contract failure and siting challenges. And even Nevada is struggling a little bit. But that's, again, due primarily to transmission constraints between north and south Nevada that have sort of lowered average compliance levels.

Let's look at the rate impact, because there has been a lot of discussion on rate impacts. Rate impacts have generally been around 1 percent or below 1 percent in a lot of these states. Again, this is the early years, but the evidence shows that these policies are not bankrupting consumers. And those types of rate impacts are pretty low considering, you know, if you look at it sort of in the context of what we've seen from conventional energy in the last few years.

And there was some discussion today about cost caps. This is how some of the other states are doing it. They either place a retail rate cost cap per customer cost cap or they set an alternative compliance payment. For instance, Maryland, Maine and New Hampshire average somewhere between a 25 to 50 megawatt

hour compliance payment, so they don't need a cost cap because if direct value goes above that amount, they'll just pay the compliance payment. Those funds go into generally a fund that's dedicated to funding a new renewable energy project. Also, some have retail rate caps. In fact, that's the one that we had in Florida in the Public Service Commission rule at 2 percent. You see some of the states are lower than that. Colorado is 1.7. Illinois is 1.4. Maryland is 2.1. Oregon and Washington actually have a 4 percent rate cap. North Carolina has a per customer rate cap. And there, an RPS -- the impact of an RPS can exceed $10 per year to a residential customer.

So the general trends and challenges. Basically, we've seen an increased stringency of RPS purchase targets, like Jim mentioned earlier. California has increased theirs to 33 percent by 2020. Hawaii's increased theirs to 40 percent. Also, a lot of them have expanded the program to include municipal utilities and cooperatives. In some states, they're not covered, but in many other states, now a hundred percent of the utilities in those states are covered. You've also seen a really expanded use of set asides, not only for solar, but also for distributed generation. And, you know, thus far, the RPS motivated capacity additions have been

mostly wind. And, in fact, wind last year produced, I think, at least there were contracts for about 10,000 megawatts of wind last year in the United States.

Now, what will the interaction be with the federal RPS, and, you know, right now, there isn't a federal RPS. There's a possibility that there might be. The American Clean Energy and Security Act of 2009 was passed in the House. It's a 20 percent RPS by 2020, but it allows states to meet 8 percent through energy efficiency. So, in effect, it could be as little as a 12 percent RPS. But the important thing to remember is that it will not preempt state efforts. I think it's important for Florida to set its own course and design an RPS design specifically to meet the needs of Florida.

So in conclusion, the RPS programs are successful, they're doing well, and they should be -- you know, they should have greater importance as years go forward, but the -- you know, the trick is designing an RPS. It's to meet the challenges of each individual state. So that's kind of the challenge before us. If you have, and if you're inclined to do so, I would encourage you to contact your House of Representatives and ask them to support an RPS this year. And I apologize for my voice.

But I did want to leave you with one last thing, and that's kind of the shifting utility paradigm that

we're heading into. These are really interesting times. We have about 80 years of history of utility regulation in this country. And the way it's been set up is that the utility was a central source of energy. We paid them for that. Utilities are regulated by the federal government and through the state to state through delegated authority. And, you know, the idea was that we wanted reliable service to customers. We wanted low cost, and actually, you know, it made a lot of sense. You didn't want 10 utility companies setting up in one territory with lines running throughout the city. And we've been able to do that. We've got reliable service, we've gotten power extended to rural areas, and we've gotten generally low rates. But now we're in the 21st century where you have technologies where we can produce electricity and the utilities are buying it, are, in fact, becoming the consumer, so -- which is a little at odds with the utility model, because utilities, obviously, are in the business of selling electricity, and they need those sales to recover the revenue which goes to append their fixed costs and earnings. So stay tuned. It will be kind of real interesting to see how that tension is resolved in the future.

Thanks so much.

MS. CHADWICK: All right. So what we're going to

do, our last speaker did make it. Michael Dobson was having some difficulty with his travels. He came all the way from Tallahassee and he's now here, so he has agreed to limit his comments to 10 minutes or so, and then we are going to just open the floor to Q&A. The Governor stepped out of the building, but he's coming back, so we're just -- if people need to go, we understand, so we'll go ahead and wrap up right around our 11:30 to 11:40 time as promised. Please stay if you can, we'll open the floor for dialogue, and we'll let -- all of the folks that have presented here today will be here, so we'll let them address any of your questions jointly at that time. So with that, I'm going to go ahead and, if Michael is here --

Okay. So we started out the morning with Tommy talking about the history and the legacy thus far in the legislature with RPS and where it's gone thus far. We've had some dialogue about the prospectives and concerns of some of the entities that will be potentially impacted by RPS, and then George just wrapped up with kind of best practices and things we need to look at that other states have already implemented. So Michael is going to just spend, again, just 10 minutes or so just kind of wrapping up on where do we go from here, what do we do based on what other

states are doing, and what we've done thus far.

Michael is the President of the Florida Renewable Energy Producers Association. He spends a lot of time up lobbying in the government on issues related to renewable energy, so he's a great resource, as are all the speakers, on just touching base on what's going on at the legislative side of things and where we can take it from here. So with that, Michael?

MR. DOBSON: Thank you.

Thank you, guys, for being patient, and as she said, I am just going to -- I've got a pretty long presentation here, but I'm going to just pick a couple of slides and go through them and just kind of talk about exactly where do we go from here.

As she said, I'm the President of the Florida Renewable Energy Producers Association, and if there is anyone that doesn't know who the organization is, we founded this organization about three years ago, and it's a 501(c)(6) non-profit, and our mission is to make sure that Florida has renewable energy landscape with respect to policies that will allow the industry to flourish. Our members are mainly large scale renewable energy developers. We have biomass members, we have some solar members, and we also have wind developers and wind manufacturers. We also have biofuels producers, as

well. And I won't rehash probably some things that Tommy and others have discussed, but I'll touch on just a few things just to kind of T up where we are.

And as I'm sure that George and others have mentioned and I'm sure you've seen a variety of maps, you know, Florida and the entire southeast is behind the curve. And the renewable energy portfolio standard is really designed to do several things. And those several things are to increase the amount of renewable energy produced in Florida, promote stable electricity prices, protect the public's health, improve the quality of Florida's environment, and stimulate our economy. And at this point, I'm going to kind of get away from the presentation a little bit and talk about that, stimulating the economy.

We have an opportunity currently. We have an unemployment rate that is nearly 12 percent, and as Tommy and others have suggested to you, over the last couple of years, we've tried to get a renewable energy portfolio standard passed in Florida, and we've -- many of us have made the argument that a renewable energy portfolio standard in any state that has been adopted has, in fact, increased renewable energy production. And given where we are currently in our economy, we need (a) the jobs, and we need to send a message to the

outside world that Florida is, yes, open for business with respect to renewable energy, and, yes, Florida is a place that respects and we encourage technology and science.

Currently, there is more venture capital dollars raised in California per week than there is in Florida per year. And that's for a variety of reasons, and one of the key reasons is because they have been able to position themselves and to market themselves and to, frankly, prove to the world that they are very progressive with respect to technology and renewable energy and a whole host of other things. Not that we want to be California, but we want to be the best Florida that we can be.

Now, currently, there are several bills in the Florida legislature regarding renewable energy. As someone, I'm sure, mentioned that there is a bill signed by Senator Nancy Detert, which is the same bill that Senator King filed last year that passed the Senate, and also there's a bill by your local Senator Lee Constantine, and it's a renewable energy portfolio standard bill, but his is a little different in that -- actually, it's a lot different in that it doesn't include nuclear. And there's a bill to address the avoided cost issue. I heard George, and I'm sure some

others, talked about, and there's a few other bills that are out there as well. On the House side, there is nothing that I can really speak to yet with -- you know, with regard to the Chair of the Energy Committee putting forward. I have had meetings with him and they have assured me that they are (a) looking at an RPS, that there will be an energy bill in the House of Representatives this year. And some pretty high up conversations I've had on the Senate side, if they had their druthers, they would have taken Senator King's bill, which is now Senator Deter's bill, and passed it already out of committee. But what they wanted to do was to, frankly, not embarrass the House, because there's a lot of things that they're going to need to negotiate between the House as the legislative session moves forward. So what they wanted to do is to not just kind of push that down anybody's throat just yet, but they're waiting to find out what the House of Representatives is going to put on the table so that they can start just trying to figure out what they need to do at that point.

And I was sharing with someone earlier, the issue of feed-in tariffs is off the table. The Senate has no appetite for it and nor does the Florida House of Representatives. And I think, you know, one of the

reasons, probably very similar to the national debate on health care. When we talk about policies that are great for some other country, there is some legislators who for idealogical purposes and et cetera, they are apprehensive about embracing those policies. So I'm sure that the supporters of feed-in tariffs will try and find some ways to try to get some of their language in some bills. But I'm just kind of giving a warning shot out there that's kind of where the legislature is thinking right now.

And I think I heard someone earlier talking about a public benefits fund, and I would like to call it a clean benefits fund. I, too, think that is a wonderful policy. What it does is it provides a stable source of funding for renewable energy projects. It's a much stable funding source as opposed to the current programs that we have now, like the solar rebate program, which is not sustainable long term because you can't really depend on it from year to year. So a public benefits fund is a great policy, but the problem is, and I think someone mentioned it, it's very difficult to have that discussion without saying you are raising taxes. So we have to figure out how do we do that. Do we try to get the legislature to see the light of the day, or do we take it to the streets? And what I mean by that is, do

we make it a ballot initiative? There is enough polls that have been provided to the public over the years that indicate that the public, by and large, would be willing to pay an additional -- I'm not sure what that cap would be, but an additional something per month for renewable energy. And you may be better off taking that fight to the streets. Just a suggestion.

And one of the items, a big item, actually, I'll mention because I know my time is extremely limited is that renewable energy environment -- I'm sorry, renewable energy advocates, we're going to need to do a better job than we have in the last couple of years. The complaints that I have heard from the Senate, our supporters in the Senate, and also our supporters in the House is that they don't get a clear message from us. There is confusion. There is noise. They want to help, but they don't know what to do. I've had a meeting with -- I guess I can mention, your Senator Constantine and I have been talking like this for a couple of years. I met with him last week. He says, Michael, you guys need to give me a plan. I'm a senator, I have -- I'm a chair of this committee, I do this, that and the other. I am not the expert, but what I need to do is a plan, so just point me in a direction. But what happens is that as advocates, we have not been consistent and concise in

terms of providing that plan, and over the last six months -- and I see Chris there, he can attest, I've been out on meetings throughout the state holding various meetings trying to get the various stakeholders to at least come together with some principals which we can all agree on to go to the legislature and work together. If we can do that, we do have friends on both sides of the House, democrats and republicans in the Senate and in the House. If we can do that, they're ready to help, you know. So I'll encourage that, and before my time is completely up, I would also suggest to you in the audience, this will require your help as well. We ask you to be engaged. The renewable energy community has not been one that's been successful with respect to lobbying and organization and et cetera. So we ask you to get involved, reach out to your friends, please join us on Twitter. It's Florida Green Energy at Twitter. Follow us on Twitter, and we encourage you to reach out and get engaged and let the legislators know that it's not just myself and George and Chris and Dr. Fenton and others that are interested in this. They need to know that there are folks that are in their legislative districts that think these policies are important.

So I can say a whole bunch more, but I will pause

at this point and, if there is any questions, I'll be glad to entertain them.

MR. LEWIS: Well, let's start to draw to a conclusion by taking a couple of questions, one or two questions, for Mr. Dobson. Are there some?

Can you come down to the mic, please?

UNIDENTIFIED SPEAKER: Good morning. You seem to be in better form or composure than you were when I saw you in October after the RPS fiasco. At any rate, I think I have a plan. It would satisfy most parties involved.

Steve Precourt has said that from the legislative perspective, offshore drilling is the priority. That and nuclear. So it seems to me, pass the offshore drilling initiative legislature, take the licensing fees from that, and -- which are going to be long term and dependable, put them into a public benefits program that you can call -- call whatever you want, feed-in tariff or whatever, that all the utilities can now -- I don't want to say match 50 percent, but match at some level, then we would have a sustainable, long term fund for renewable portfolios.

MR. DOBSON: Well, actually that's really not a bad plan. It's very interesting. I'll just -- what I'll share with you is Florida Renewable Energy Producers

Association, we have not taken a stand with respect to the offshore oil drilling because, at the end of the day, when we look at it, we say, well, does this impact the ability of a biomass developer to get his project done on Progress Energy's grid. Well, no, it doesn't, you know. So that's more of a environmental fight than it is a renewable energy development fight. As renewable energy developers, we are really business guys. When you've got to raise 200 million dollars to build a project, you know, you're really a business guy. But what I'll share with you is that my concern is that I don't want the offshore oil drilling to be pitted against renewable energy. That's the problem. And the same goes to nuclear. I don't -- we think that those things should be dealt with on their own, and if there is some benefit to the renewable energy community, such as that plan that you just mentioned, I think that would be wonderful, but we don't want that to impede the progress we're trying to make.

MR. LEWIS: That is a good place to kind of bring your thoughts together and take the feedback form that you picked up on the way in, and even if it's not well worded, if you can just jot down three things that people in this room, people in this symposium could do to help insure that RPS passes this year. Should it be

something like the plan that was just suggested? Should we work with the EDO's? If it's jobs, jobs, jobs, then chambers and economic development commissions and so forth might be the root to meet the legislators. Is it a referendum? There were a lot of ideas today, but, one, two, three, what do you think that everyone in this room could do? That would be very helpful to us in bringing everyone's thoughts together to take things to the next step. There was also a couple of questions on the feedback form to get us started in planning for our next Cleantech symposium in April on green building codes and ordinances. So the feedback forms are very helpful to us, if you could kindly take a few minutes to drop it off on your way out.

Kirstie?

MS. CHADWICK: Our Governor will be here somewhere in the next 20 to 25 minutes, but we agreed and told you we'd be done at 11:30. We got pretty fairly close given the late start. What I think we're going to do is, if you need to go, please do. All the folks that were speakers have all agreed to hang out, and I think we're going to open the floor for questions, and if you can stay, great. If you have questions, now is the time to do it. I'm just going to ask all of the speakers, Robyn, if you could just come -- if you're still here

and represent the builders panel so that we don't have too many folks. Just come on up towards the front. We'll just do this informally, but if you need to go, we completely understand. We just want to hold the floor open a little bit just in case the Governor is able to pop in here in the next 20 or 30 minutes. But it's completely up to you. So with that, I will formally adjourn things, and, informally, we'll hang out and do the Q&A while we're waiting to see what happens. Okay?

MR. LEWIS: Does everyone want to stay where they are, except for people that have to leave and have other things they need to be at? I need to be someplace myself at noon for a couple hours, but I'm going to walk in late.

Maybe one thing that we can -- that someone would want to address is I'm curious of the organization that you represent, what are you doing to insure that a RPS passes this year? What is your action plan? Anybody want to address that? Because is that a work item for any organization here? Think about that as the panel comes up, and they may be able to instigate a few more questions.

MR. BOROUGHS: Let me make a comment. I think Michael hit the nail on the head when he said, look, if you're interested in RPS, talk to your local

legislators. They are more receptive to members that vote for them, okay, because the members that vote for them have citizens that vote for them, have neighbors that vote for them. They represent you. In many ways, they're much more influential than highly paid lobbyists. Tell them it's important. Tell them why it's important. That's the best thing to do. If we can get people to do that all over the state, we'll win, okay? But if we don't, it's not going to go anywhere, because we've got basically, for the most part, a House that's kind of reluctant to go very far. But we can do it if we'll all get out there and talk to our own House members.

MR. LEWIS: I want to recognize Stacy Schmidt who came in a little while ago. She's someone who you would all like to meet, I'm sure. She is the manager of the -- or the director of the Economic Gardening Institute at UCF that you have been reading about in the papers. So you might want -- the website is growfl.com?

MS. SCHMIDT: That's correct, yes. And I would be happy to answer any questions you might have about the growfl program and how we're working in Florida to help second stage companies grow.

MR. LEWIS: Okay. I think the panel would be good at taking it from here and either making some wrap up

comments or asking some questions of people who are remaining.

UNIDENTIFIED SPEAKER: Maybe not a question but more of an observation. There has been a lot of talk about a referendum. I think that's an exceptional idea, except that I think here in Florida we are in the Plasticine and our legislature is all Neanderthals, and I've been working with the Amendment 4 Referendum and the business lobby is prepared to spend a gazillion dollars to try to defeat that, and I'm not so sure that the same thing wouldn't happen on a renewable energy standard. All that would have to happen is the tea partyists and the faux news people, you know, figure out some reason why it's not a good idea, and we would be toast and spend a whole lot of money and get nowhere.

MR. LEWIS: Is that a reason not to, Michael?

MR. DOBSON: Well, what I would say and I've always said is that there's more of us than them. You know, we've just got to get organized. I mean, that's really it. The problem is there is so many -- gosh, so many different renewable energy kind of policies and ideas out there, and what happens is that we go to the legislature and everybody's, you know, coming there with these 10 or 20 ideas, you know, and it's confusing to those guys. You know, so there is -- again, there is --

we got the numbers, but we just got to decide on what it is we want to aim at.

MR. LEWIS: Who initiates the referendum?

MR. DOBSON: I don't know. George and I will have to talk about that.

MS. BALDWIN: Hi, this is Melissa Baldwin. I'm with the Florida Conservation Alliance Institute, and we work on federal climate and energy policy. I have two questions. The first question is, what do you think is the best policy, both on the state and the federal level, that we can take to increase distributed generation?

MR. CAVROS: You know, I'll take a shot at that. You know, the one thing you need to do to increase distributed generation is you need to have certainties and you need to have transparency, and that's actually been one of the criticisms of the renewable portfolio standard in the past is that only the big players can play. There is really kind of what they call high transaction costs, which means, you know, you need a team of lawyers to negotiate these contracts, and that tends to dissuade smaller developers from participating. And, additionally, you know, contract negotiation, it's a very sort of resource intensive process. If you have, you know, like I talked about earlier in my

presentation, sort of open contracts that anyone can take advantage of if they need certain criteria, like a standard offer contract or even in components within -- perhaps a carve out for distributed generation. I think the way you implement that is you offer standard offer contracts to folks or you incorporate a feed-in tariff for smaller generators. Maybe, you know, 20 megawatts or less. In fact, the California Public Utilities Commission is trying to incorporate the feed-in tariffs for smaller systems of 20 megawatts and under. They're having proceedings in that right now, because the smaller systems just simply aren't getting built with these RPS's. So that's certainly one way to go about it.

MR. BOROUGHS: Most of my Florida Energy Commission had a recommendation that dealt with it directly in Florida. A person or a company cannot sell, cannot set up a generating unit and sell energy to anybody and any other utilities district without being considered a utility, you know, and regulated by the PSC, and so once you set up business in somebody else's territory, you know, you are going to have that issue, so -- and we know all of the IOU's especially oppose that. So our recommendation was to limit it to 5 megawatts, because we thought maybe that might be bite size. But if you do

that, then you take away a barrier. You know, it's not necessarily -- you know, one of the things that government needs to do is not just incentarize, it's to remove barriers. That's a barrier. We need to remove that barrier. And the legislation in 2008 took some steps. We do net metering. Even the munis and co-ops do net metering. But that still doesn't go as far as allowing an entity to come in, okay, I'm ABC Company, I come into your place of business, I -- you know, I set up some kind of, you know, renewable generation operation, I sell you my power, and then I sell back what you don't need, you know, on the grid or to somebody else. That's one way you get distributed generation, and distributed generation, once again, remember, you don't have to transmit it. You hear all this wind talk, wind energy talk nationally with all these wind tunnels coming up in the middle of the country. The problem with that is you got to transport it all the way to the centers where you need it. This is one of the problems that California is having now, because they've got -- a lot of the solar power they buy or the solar concentrating power that they buy is from Arizona. You got to transmit it in. Transmission is very expensive. Okay. Takes a long time. It's very expensive. You got some losses. We need to encourage

all the distributed generation we can.

MS. BALDWIN: That sounds like a common sense policy to me. Are there any law makers who are championing that idea, or is it in a bill? Has it been proposed?

MR. BOROUGHS: None that I know of.

MS. BALDWIN: Why not?

MR. BOROUGHS: I don't think anybody wants to take that on. I mean, I -- that's what I don't think. I mean, we're having problems right now getting champions for renewable energy. That's just another -- that's another rock in somebody's pack, you know, to try to carry. So I just don't see any will. I think we've got to take other steps before we get -- it is common sense and I agree with you, okay, now on the other hand, and one reason why you might want to keep it small is when the IOU's say, look, we spent a lot of money, we have a statutory duty, we have a mandate to serve. So if you're in our territory, we've got to serve you. That means we got to have the grid there and everything else. So we have to consider the whole picture. We can't throw the baby out the bath water. George mentioned now we've got that competition between the producer and the user we didn't have back 80 years ago when we started this system, but there are ways to work through it, and

that's one of the ways we can work through it.

MS. SZARO: And I want to add a couple of other ideas to the mix. One of the things that happened this year that has slightly disrupted our progress is a change in legislation regarding property taxes in tangible tax for solar. So it originally had an exemption, and now that's being reconsidered, sort of pulled back and pulled off the table. So that adds to the cost of installing a system over the life of the system, not just in the first year. So that right there is a barrier that we had overcome previously and is now back on the table.

And then the other thing I would want to mention is permitting requirements. They are all over the board in the state of Florida, and, you know, we are trying to work with our code officials and unlock all inspectors in our service territory, and just in our service territory, we deal with four code jurisdictions, and none of them do it the same. And they want to learn and they are willing to learn, but at the state level, if we were to try to standardize solar permitting, I think there would be a huge benefit to both utilities trying to implement these programs and the customers trying to participate.

MS. BALDWIN: I have one more question, and that

is, it has to do with federal energy and climate policy, and I think one of you mentioned the idea of putting a price on carbon. What are the benefits of having a price on carbon in terms of having more certainty in the marketplace and how would that affect Florida's ability to draw more clean energy businesses to our state and to our country?

MR. DOBSON: I think it's a good idea, but politically it's difficult because -- well, I'm sure you hear the rhetoric, capping tax and all that. I think that citizens are going to have to show politicians how much they value clean air, lower emissions, and until that happens, the -- I guess the two parties -- we only have a two party system for the most part, they're going to use this as kind of a political football and it's going to be a way to either get elected or get defeated. And that's what's happening now. But, again, we've got to get engaged and let them know that we care about it.

MR. CAVROS: Thanks. I just wanted to add to that, because we really didn't go to the subject of, you know, capping CO2 emissions. People respond to price signals. I have found, you know, that they don't respond really to anything else except price signals. That's it. They don't respond to legacy arguments, they don't respond to saving the planet, they respond to price signals. And

to suggest that this is some sort of tax, you know, call it what you will, but as a society, we always put a price on things that are not good for the greater community. You know, alcohol, cigarettes, you know, you name it. To some extent, you know, we regulate those activities, and we ought to be doing the same with CO2 emissions, especially living in Florida. We have 1,200 miles of coastline and we're on the front lines of climate change, and certainly, as a state and as a nation, we need to lead in that effort to reduce CO2 emissions. It's not going to be easy, but I think the countries that step out in front of it will be the ones that do better in the long time, over the long haul in the world's marketplace. So I think they can all work together, I think, in energy efficiency, I think in RPS, and I think some sort of regulation on carbon. It's really a three legged stool, because also -- a cap on carbon also goes beyond the electricity industry. It goes to the greater economy as a whole. Then, you know, we start to be more competitive on other industries as well.

DR. FENTON: I just want to add, another comment here is that we're stuck in this sort of situation. We've heard taxes are bad words. The future, a future we want, requires an investment. Otherwise, you end up

with a future of which you've made no investment, and you'll get what you get. Okay? So the question is, are we willing to invest in the future and come together collectively to determine what that future should be. And it's difficult, because right now nobody wants to spend money. So I think we're going to be in a stalemate of not coming up with a future that we want. So I think individually we have to make it known that we want a clean, sustainable future and that we're willing to make an investment, albeit not a real expensive one, but more than a penny a month. Okay. And the poll that came out, by the way, that was passed, it had an 83 percent, you know, approval of this was a dollar a month of an investment. That's the poll that came out three years ago said a dollar a month. You notice on the public benefit numbers that I had put up there, California is typically on the $2 a month, and I tried to explain to you that their electric bill total a month is about half of what we pay. So, you know, we're looking at the notices. The rebate you got was $4 a month because the price of fossil fuels went down. All right. So I think the citizens are willing to do it. We just have to collectively realize it's an investment in the future. And there's a lot to be said for the jobs that come out of all this, whether it be cap and

trade or renewables or efficiencies, which are the lowest cost things to go do. There's a lot of employment to be done, and I would rather have that employment be my neighbor next door rather than somebody outside the state.

UNIDENTIFIED SPEAKER: Thank you. Good morning again. I want to make a comment, a take off of Mr. Cavros's presentation where he believes that Florida is at a crossroads, and I agree, maybe for a different reason. It has to do with the nuclear equation. Every year, the PSC requires utilities to provide a 10 year plan for baseline, I think, electricity, how they're going to generate it, and in this year's plan released in November or December of '09, it calls for the years 2016 to 2018 going from 13 percent nuclear to roughly about 25 percent nuclear. I, frankly, don't think that's going to happen in light of the fact that the PSC just shot FPL and FPE down for rate increases. So I just can't see these plants coming online to provide those kind of numbers. So don't know where the electricity generation is going to come from at that timeframe, but it seems we're sitting in a unique position for a renewable portfolio standard this year as a transition year just looking at those numbers alone and saying, hey, we have to have a plan in place.

Whether it's renewable or nuclear really doesn't matter. We're talking about electricity in general.

MR. DOBSON: Amen.

MS. SZARO: I will say, just as an aside, I first want to congratulate those who are doing such an excellent job in conservation and demand site market. So well done. But that does make it a little bit more challenging to integrate new renewables and new power into the grid when you already have a 30 percent reserve margin. So I think that's one of the factors, and I hear what you're saying about nuclear, and, you know, I think you are on track with that. So where will it come from? I think as we start doing more with integrated resource planning, incorporating solar and other renewables into the mix, we'll be ready at 2020 with the right mix at that time.

MR. ALLER: Thank you. It's been a great set of presentations today. My name is Michael Aller. I'm with Rollins College, and a lot of my questions have actually been touched on in one way or another, but I do have a couple questions. One is we are in a very kind of resource constrained time, both in this state, in the country, in the local economy. And yet as Dr. Fenton was just saying, we do need to find ways to make investments in these areas. Dr. Fenton talked a lot

about energy efficiency. What are some ways that we can try and get -- kind of push energy efficiency, because that is the most cost effective way, but how can we get that message across to the people who need to know? What are some specific, you know, policy things that we can do to get energy efficiency pushed forward, first of all, and then second of all, given the importance of setting prices, you know, setting a price to kind of follow on behavior, given the problems that cap and trade has had and others, what are some things that we as a state can do that we could try and, you know -- or at a local level that we can try and push these things forward?

DR. FENTON: I think I can handle the first one here. A little tougher time with the second one. As George has pointed out and several others have pointed out, efficiency is the low hanging fruit. The problem that we often have is this up front cost to pay for insulation, better windows, so on and so forth. I remind everybody that you get a 30 year mortgage usually when you buy a piece of property, and so if we come up with some policies where there is some ways to have us finance these things, often with paybacks of 5 years, 10 years, and so forth, we get one stop financing, one stop shopping to go ahead and make the improvements, we put

in some policies that require us to actually measure, you know, home energy ratings, so you actually know, you know, how well my house is behaving, what the most cost effective improvements are that can be made. The role of government here may be to insure the low cost financing and the availability of it to the citizens. Typically, we can get about 30 percent energy savings at a cost effective mechanism. So that just means I need financing. And I remind everybody that if you have a payback that's less than 30 years, when you have a 30 year mortgage, you put money in your pocket the first month, okay? So a lot of this is just an issue of finding financing and a creative will. And I think that could do that. Then if we choose then to use the savings that we as a collective group use and put that, say, into some public benefit fund of some sort, you could then pay for the renewables that are perhaps not quite as cost effective.

MR. CAVROS: I just wanted to add just one thing to that. There will be legislation, I suspect, this year. They will be promoting renewable and energy efficient finance districts which will give local municipalities the statutory authority they need to go ahead and set up districts and float bonds to lend money to folks and to implement energy efficiency measures or renewable energy

on their home so that there will be no up front cost for that, and the payment will be over 20 years at a very low interest rate. So I think that's kind of one common sense policy that all of us can support.

MR. BOROUGHS: One way to encourage energy efficiency is to have an energy efficiency standard just like a renewable portfolio standard. One thing my Florida Energy Commission recommended was to set that up. And I realize in the current political environment that's a tough sell, but I think if you do that, if you structure that, you could get it. One of the problems, as Jim has indicated, you know, is the initial cost. But if you set it up, you work at it, you get the utilities working with the customers, okay, because the low hanging fruit is the kilowatt you don't use. I stole that. Jim Fenton used that line, but the cheapest kilowatt is the one you don't have to produce, and that's energy efficiency and conservation, and we need to encourage both of those. So you are right on.

UNIDENTIFIED SPEAKER: The RPS bill now doesn't have an energy efficiency -- sorry. Nevermind.

MR. DOBSON: Can you repeat that, please?

UNIDENTIFIED SPEAKER: The question is that the current renewable portfolio standard bill is not believed to include an energy efficiency standard.

MR. BOROUGHS: Right, it does not.

MR. DOBSON: That doesn't mean we can't do some work and try and include some language that would address that at a later date.

MS. CALLIE: Cookie Callie. I just want to say that the government does have a program in place, an energy efficient mortgage program, that does rely on codes and qualifications that will preapprove someone, say, who is approved for $100,000, they can add on the cost of the improvements and they will be qualified for that, because it recognizes that they won't be spending their income for energy in the future. So it is in place. It's very misunderstood and not well known at all, but it's really important. It's a really important program.

UNIDENTIFIED SPEAKER: I just want your opinion on two things. One is quality control and the other one is storage. I know FSEC, I guess, does a lot of things in storage. Correct me, I guess, if I'm wrong. But maybe you can comment on flywheels perhaps or other storage anyway. And the other one, as far as quality is concerned, insuring what should be the policy. So insure that the systems that are put in place, you know, are performance based, you know, do provide what they're saying. So what's your opinion?

MS. SZARO: I'm going to start backwards and then hand the mic over. On the performance standards, while that definitely comes from code officials and making sure systems are permitted properly, but in our case, we from the solar perspective wanted to insure that the systems that we were spending money on were going to work for the long term, which is why we take the extra steps we don't have to do, some of the extra steps that we do, but we do it because we want to make sure the systems are going to be there. So, for instance, we established a performance incentive program instead of an upfront rebate for our programs. Yes, it's a little more complicated, and, yes, it's a little more involved, but we feel that it's the best way to insure that we are getting our money's worth and that the customers are getting their money's worth. So programs like that that measure per kilowatt hour or per kilowatt hour saved will insure that the performance of those measures last longer and that the folks that are spending the money are really getting their money's worth. And I would encourage measurement and verification for all of these types of programs. I think that's key to making them last in the long term.

DR. FENTON: I agree. It's all about performance. Okay. Yes, all our high school students can pass high

school, but can they perform? Okay? And we can argue about FACT tests, but measuring performance is key. So we have to set up performance standards on things, and the programs that OUC mentioned meet a lot of the needs. Keep in mind, OUC is the utility of the people. Okay? So that makes sense that they do some of those things and I would encourage the others to continue to do that as well. Regarding long term renewables, as we move higher up to higher percentages in the 10's and 20's, which is where we all want to go, it's a question of when we do have this problem, as Jennifer pointed out, with peaking and energy storage, and so energy storage will play a major role. This will help out the grids and so forth. Our opportunities here in Florida are limited, are gravity challenged. We can't pump water up a hill in storage like a lot of places can. We can't pump air underground. So it probably will be chemical energy storage probably in the form of flow batteries, okay, flywheels in the future, super capacitors and things like this. You know, there's research activities going on in that, but we haven't quite gotten to that saturation point. Hopefully, we'll get there where we will do peak shaving and be able to soften out some of the peaks that Jennifer had pointed out earlier.

MS. CHADWICK: Okay. The Governor is here, so

we're going to move the microphone back. We appreciate you guys punting and filling the time, and, hopefully, there was some good Q&A while we were tracking the Governor down.

MR. LEWIS: Everyone, Governor Charlie Crist.

GOVERNOR CRIST: Hi, how are you?

MR. LEWIS: This is the good governor that's been working with Orange County to help us come up with our Cleantech initiative and renewable energy and bringing all those good Cleantech companies to Florida, and I understand we've got to speak at the podium, but we know that our agenda matches yours, and we're thrilled that you stopped by to see us today.

GOVERNOR CRIST: I'm honored to be here. Thank you very much. I want to tell you how encouraged I am by exactly what you are doing. I know that Senator Constantine has been a very active participant in developing clean energy, clean technology, and making Florida a cleaner and better place to live, and it has been one of the most passionate drivers of our administration. I can tell you that. And Tom knows that because we've had the chance to work together on a lot of different issues, but I can't help but notice your tie there with the sun on it, and it reminds me of a story. When I first got elected governor during the

course of the campaign four years ago, we talked a lot about trying to increase solar energy in Florida. And I don't know if that's what you're involved in, probably is due to the tie, but I remember a number of people said, well, Governor -- after I got sworn in -- you know, we really don't have enough sunshine in Florida to develop solar energy. And I thought, Florida, sunshine state. That really doesn't jive. And, at the time, Florida in 2006, was dead last in the amount of solar energy production we were putting forward. Last out of 50 states. Well, I'm proud to tell you that today Florida is No. 2 in the country in solar energy production. And, frankly, Florida Power and Light has done a tremendous amount in order to advance that down the field, and I'm very grateful to them for it. We have now the largest solar array panel in North America in Florida, where it ought to be, the sunshine state, and I'm very, very pleased that that has happened. But whether it's solar energy or other types of clean energy, I think these things are awfully important for a place, especially like the sunshine state. I mean, it's the most beautiful state in America. I'm terribly biased as your governor, and I had better be. But I believe it to be true as well, and I think that anything that we can do in any area to -- I mean, look what we've

done with rail. You know, you talk about being able to move safely between Tampa and Orlando with this bullet train that now the administration has committed to us, 1.25 billions dollars worth of commitment, as a down payment, I should add, people will be able to get between these two incredible communities safely, quickly, and it will be clean. And that's very exciting to me as well. And whether people believe in climate change or not is almost irrelevant. What is relevant is that all the things that you would want to do to address it are good for Florida. And they're good for Florida economically, not just environmentally, because Florida is a special place where the economy and the environment are inextricably linked. You know, we have this sort of big industry called tourism. Over 80 million people a year come to this state, and I'm convinced they don't come here because she's ugly but because she's rather beautiful. And, you know, protecting her and protecting God's work and being good stewards I think is one of the greatest responsibilities that we all have. And it's good for our economy, too, in another way. Because of the new industries that get developed as a result of it. So there is no down side. Zero. You know, if done right and done smart. And so I just had the opportunity to find out that you were here and wanted to come by and

thank you for what you're doing. Mayor Crotty I know is committed to it and Mayor Dyer as well. And, you know, Orlando is really on fire. It's unbelievable what's going on here. With Nemours and the Medical City, I call it Medical Plant, out there, it's so big, but so many exciting things. The new arena, all of the projects that are occurring and employing people, and in this economy, that's critically important. So what you are doing to develop new areas of potential employment for more people is one of the most laudable things anybody can be about right now. It is with great purpose that I am sure you continue to push forward. And I want to thank you for it on behalf of the almost 20 million people that live in our state. God bless you. Thank you.

MR. LEWIS: Thank you so much for all you do for Florida and Central Florida. We appreciate it.

GOVERNOR CRIST: I want to keep doing it, so if you'll let me, that will be great, too.

MR. LEWIS: Thanks for stopping by. We're adjourned.

(Symposium concluded at 12:18 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA
COUNTY OF ORANGE

I, Leslie Richmond, Registered Professional Reporter, certify that I was authorized to and did stenographically report the foregoing symposium, and that the foregoing transcript, including 158 pages, is a true and complete record of my stenographic notes.

Dated this 1st day of March, 2010.

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Leslie Richmond, RPR and
Notary Public