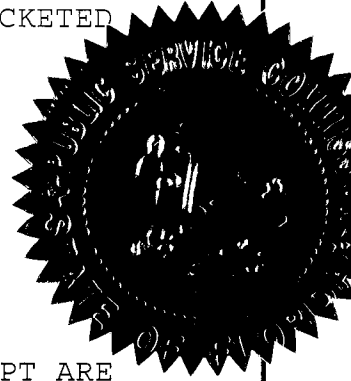


BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. UNDOCKETED

In the Matter of
RENEWABLE PORTFOLIO STANDARDS.



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 COMMISSIONER NATHAN A. SKOP

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P R O C E E D I N G S

1
2 CHAIRMAN EDGAR: Good morning. We are going to get
3 started here in just a moment.

4 Thank you and welcome all. We are very glad to see
5 so many people here and so much interest in our topic today. I
6 want to say thank you, of course, to all of our presenters, but
7 also, again, thank you to all of you who are here to follow
8 along and -- can't hear? Okay. We are going to work on that.
9 Thank you.

10 Commissioner, can you tell us a few jokes? But they
11 have to have the word green in them.

12 Okay. Any better? No. Any better? Not any better.
13 Okay. Give me just a moment. Thank you for your patience.

14 Nope. Still need a little help, please.

15 Nothing?

16 Better?

17 UNIDENTIFIED SPEAKER: Oh, that's much better.

18 CHAIRMAN EDGAR: Oh. All right. I see a few hands
19 in the back. Thank you. Okay. We're going to try this again.

20 So let me say, again, thank you to all of you for
21 being here, to those of you who will be presenting on our
22 agenda today. And thank you, for the rest of you as well for
23 your interest in this topic, and I hope that you will also be
24 participating as we move through our discussions over the next
25 months.

1 Part of our charge as regulators is to ensure and to
2 maintain a reliable and secure supply of electricity. Here at
3 the Commission we are very aware that a diverse fuel portfolio
4 is in Florida's best interest, and it helps our economy, it
5 helps price stability and it helps us ensure reliability and
6 fuel supply. Part of what we will be talking about today is
7 how we can take some further steps to diversify our fuel
8 portfolio looking specifically at renewable and alternative
9 energy and how we can further adding those forms of generation
10 to our fuel supply.

11 This continues a process that we began last year. We
12 had a workshop in January, as many of you I hope know. We have
13 worked on rules in the past to provide greater use of renewable
14 generation in the state and to remove regulatory barriers from
15 our part of the process. We will move forward on this. We are
16 excited about it. We will move forward in a way that is both
17 thoughtful and prudent, but yet timely, and we will work within
18 our existing statutory authority.

19 Before we move to our speakers, let me do a few
20 housekeeping comments. There is a sign-up sheet in the back of
21 the room. Please, if you haven't yet, sign up and share your
22 information with us. We are putting together an e-mail list to
23 solicit comments in the future and continue to ask you to
24 participate in the processes. The presentations that will be
25 given today will be available on the website probably next

1 week, and there will be a transcript also available in the near
2 future.

3 We do have a full agenda, and we are getting a little
4 bit of a late start. Although, of course, part of the value of
5 getting us altogether is giving a little opportunity for there
6 to be discussion. But I do ask for all of your assistance in
7 helping us stay on schedule so that we don't need to rush
8 through the presentations that are at the end. I do want this
9 to be informative.

10 Commissioners, you will certainly have the
11 opportunity to ask questions and have discussion, as you would
12 like. And I would also ask as we move through the sections
13 that are laid out on the agenda we will take just a couple of
14 minutes in between each section, and as we move from B to C, C
15 to D, et cetera, if those presenters would come forward and
16 that way it will be a little smoother as you come to the
17 podium.

18 Okay. I think that I am ready to move on and get
19 started. I have asked for some comments briefly to help us get
20 this kicked off from some of our sister agencies who are also
21 participating on related issues on this effort. We will have
22 some comments later from a representative of the Governor's
23 Office. But right now I would like to ask Jay Levenstein,
24 Deputy Commissioner of Agriculture, to come forward and share a
25 few comments with us on behalf of the Commissioner. Thank you,

1 Jay.

2 MR. LEVENSTEIN: Thank you, Chairman Edgar. Good
3 morning, Commissioners, Chairman. Senator Argenziano, it's
4 good to see you, and I am glad we will be working -- continuing
5 our history of working together. And I thank you for the
6 opportunity to come here and speak to you today, which my first
7 opportunity was several months ago when you had a workshop, and
8 I am glad to continue our involvement with the PSC on these
9 issues.

10 I think you are all familiar with our farm-to-fuel
11 initiative which we talked about last time. The genesis of
12 which is the national 25 by 25 vision, which states simply that
13 by the year 2025 America's farms, forests, and ranches will
14 provide 25 percent of the total energy consumed in the United
15 States while continuing to produce safe, abundant, and
16 affordable food, feed and fiber.

17 Farm to fuel, our initiative here in Florida, was
18 created by the 2006 Legislature to enhance the market for and
19 promote production and distribution of renewable energy from
20 Florida grown crops, agricultural wastes and residues, and
21 other biomass, and further, to enhance the value of
22 agricultural products and expand agribusiness in the state of
23 Florida.

24 We are convinced that Florida can be a leader in the
25 production of renewable energy from our 15 million acres of

1 forestland, our ten million acres of farmland, three
2 million acres of pasture, in addition to solar and other
3 renewable energy technologies available to us. This is
4 important for a number of reasons.

5 The first reason, which is very key to us and to
6 Commissioner Bronson, of course, is the future of our
7 agricultural industry here in the state of Florida. Although
8 we are among the largest agricultural states in the country
9 with an annual -- and these are new numbers that just came out
10 a few weeks ago -- annual economic impact of more than
11 \$90 billion. Record population growth in the state of Florida
12 that we continue to see, high land values, development
13 pressure, and constant challenges to our farmers, such as
14 pests, diseases, drought, natural disasters continue to
15 threaten our agricultural future. We must employ policies,
16 practices, and strategies to maintain our farmland, forests,
17 and green space in the state of Florida.

18 Second, Florida ranks third in the nation in fuel
19 consumption, and our per household consumption of electricity,
20 much of which is derived from petroleum and natural gas, is
21 among the highest in the United States. Not only does the vast
22 majority of our energy consumption come from non-renewable
23 sources, or resources I should say, those resources do not
24 exist here in our state.

25 And, third, as we address the issue of climate

1 change, as has been done so recently by Commissioner Bronson,
2 CFO Sink, Governor Crist, and the Florida Legislature,
3 agriculture will play a major role in contributing to the
4 reduction of greenhouse gas emissions. And in addition to
5 which we stand -- there is a risk of greenhouse gas emissions
6 or climate change affecting our industry, as well.

7 One of the strategies that we support wholly in
8 assisting in the production of clean and renewable energy and
9 bio-industry is that of net metering, which I'm sure will be a
10 topic of future discussions by the Commission, if not today.

11 Now, as for implementation of a renewable portfolio
12 standard for the state of Florida, let me say this, that
13 generally speaking, generally speaking, Commissioner Bronson
14 prefers reasonable and attainable goals supported by
15 incentive-based programs over mandates.

16 While the Governor's Executive Order 07-127 requests
17 the PSC to initiate rulemaking to require that utilities
18 produce at least 20 percent of their electricity from renewable
19 resources, with a strong focus on solar and wind energy, we
20 need to ensure that our ability to produce and deliver this
21 energy is not outpaced by our desire to attain a stated goal.

22 While we, this is the state of Florida, is ranked
23 number one in the country in potential for biomass production
24 with the potential being 93.5 million dry tons of biomass per
25 year, which represents seven percent of the U.S. total, we need

1 to ensure that these resources are used in a sustainable
2 manner. In particular, although our vast forest resources
3 provide literally tons and tons of material that can be
4 converted to renewable energy and fuels, we need to look at
5 maximum utilization of materials that are underutilized, land
6 clearing, residues from harvesting, utilization of invasive and
7 exotic species, which is something that we are very interested
8 in. In fact, we have recently had some testing done on some
9 invasives here in the state of Florida to see their Btu
10 content, and the results were very favorable, so that is one of
11 the things we need to try to capture. And utilization from
12 materials from right-of-way maintenance and otherwise
13 non-merchantable resources to meet our biomass demands.

14 As many of you know, and I think a number of people
15 here in the room, and Chairman Edgar, we appreciate you
16 participating, we just completed our second annual farm-to-fuel
17 summit which was attended by 450 individuals in St. Petersburg.
18 The summit featured presentations on thermochemical
19 bio-refineries, current and potential uses of forest biomass
20 for energy in Florida, commercial scale generation of renewable
21 electricity from an energy farm in Florida, and a presentation
22 of the production of wood pellets in Florida to serve the
23 European power industry, just to name a few. In fact, the wood
24 pellets presentation was really interesting because they are
25 building the largest wood pellet facility in the -- I am sure

1 the country, at least the country, possibly in the world, here
2 in Florida. They can take our resources and ship them overseas
3 to be used in Europe to meet their energy needs in renewables.
4 So it is great we are doing that, but we need to keep those
5 resources here in Florida and produce our own renewable energy
6 out of our own renewable resources. In any event, it was clear
7 to everybody in attendance at our meeting last week that the
8 opportunities for Florida are plentiful, and we look forward to
9 working with all interested parties to make this a reality.

10 Thank you again for the opportunity today, and I
11 applaud the PSC's proactive approach in advancing the
12 production and distribution of renewable energy in the state of
13 Florida.

14 Thank you.

15 CHAIRMAN EDGAR: Thank you, Jay. Thank you.

16 And now I would like to call upon Steve Adams from
17 the Department of Environmental Protection to talk to us for a
18 few minutes.

19 Steve, welcome.

20 MR. ADAMS: Thank you, Chairman. Commissioners, good
21 morning. This is a real honor for me to be before you today.
22 I am Steve Adams. I am the Director of Planning and Strategic
23 Projects at the Florida Department of Environmental Protection,
24 and I'm really glad to be here representing the department and
25 Secretary Sole this morning.

1 Earlier this year, Commissioners, the department
2 completed its first greenhouse gas emissions inventory for the
3 state of Florida, and not surprisingly we found that fossil
4 fuel combustion is responsible for 89 percent of greenhouse gas
5 emissions in the state. The emissions from fossil fuel
6 combustion are primarily attributable to electric utilities and
7 to transportation, comprising 50 and 41 percent respectively.
8 In essence, Florida's greenhouse gas emissions are driven
9 largely by Floridians like me and consumer demands for
10 electricity and mobility.

11 It is the department's view that Florida's climate
12 change policy must include energy conservation and it must
13 include a range of new energy efficiency technologies, and an
14 increased role for renewables in Florida's total energy supply.
15 And your workshop today is dedicated to a remarkably important
16 tool for helping Floridians reduce our greenhouse gas
17 emissions, the renewable portfolio standard.

18 We view a defined portfolio standard as a vital tool
19 in mobilizing the capital required to develop renewable energy
20 technologies and this will be critical in increasing the
21 diversity of Florida's energy supply and in achieving
22 significant greenhouse gas emission reductions in the mid to
23 longer term.

24 And while by right you are first and foremost
25 concerned with the affairs of Floridians, we cannot forget the

1 significance of Florida's actions on national and international
2 capital markets. By adding the weight of Florida's
3 marketplace, the nations fourth and soon to be third largest
4 state to that renewable energy marketplace, Florida's policies
5 will, indeed, move capital markets worldwide.

6 According to the U.S. Department of Energy, 27 states
7 and the District of Columbia currently have enacted renewable
8 portfolio standards. Not surprisingly, these policies vary
9 widely state to state, across jurisdictions. In considering
10 the experience of other states, I think several key design
11 considerations emerge. Portfolio standards are, across all of
12 these jurisdictions, outcome oriented. The standards enacted
13 today to establish either a percentage of absolute amount of
14 electricity generation or capacity, and this in our view is
15 important to provide unambiguous signals to capital markets.
16 The standards range from a low of four percent in Massachusetts
17 by 2009 with a one percent annual increase each year
18 thereafter, to a high of 25 percent in three states, Illinois,
19 Minnesota and in Oregon. The 20 percent standard is clearly
20 aggressive, but other states have committed to doing more.
21 Most standards phase in over years and states vary widely as to
22 when the full requirement takes effect. For instance, it
23 ranges from as early as 2009, as stated in Massachusetts,
24 outward to 2025 for several states.

25 I think other design considerations will emerge today

1 as you discuss this issue and certainly over the months as you
2 have additional workshops. The standard must be predictable,
3 obviously, for market participants in order to facilitate
4 long-term contracts. The standard must, of course, be
5 cost-effective to administer, it must provide flexibility for
6 utilities in meeting the requirements, it must be fair and i
7 must be enforceable.

8 It is the department's view that Florida can
9 cost-effectively achieve a 20 percent renewable generation
10 portfolio. The standard will increase our energy security, and
11 it will provide a very important contribution to reducing
12 Florida's greenhouse gas emissions. And on behalf of the
13 department, we offer any assistance the Commission may request,
14 and we look forward to working closely with you over the coming
15 months and years.

16 Thank you.

17 CHAIRMAN EDGAR: Thank you. Thank you to
18 Commissioner Bronson and to Secretary Sole for their work and
19 for their continued cooperation and participation in our
20 process as we appreciate both you being here with us today.

21 While we have our next presenters come forward, which
22 is Section B on the agenda, I would like to take a moment and
23 ask our staff to read the notice for the record.

24 COMMISSION STAFF: Thank you, Madam Chairman,
25 Commissioners. Pursuant to notice, this time and place has

1 been set for a Commission workshop on renewable portfolio
2 standards.

3 CHAIRMAN EDGAR: Thank you. So we are on Section B
4 on the agenda where we are going to talk about possible
5 definitions of a renewable portfolio standard, examples that
6 have been used in other states, best practices, and lessons
7 learned. And the first person that I have on my agenda is
8 Robert Reedy, Director, Solar Energy Division, Florida Solar
9 Energy Center.

10 Mr. Reedy.

11 MR. REEDY: Thank you very much. Thanks to the
12 Commission. I appreciate this opportunity to kick off the
13 discussion today, and I also appreciate that this is more
14 structured as a discussion in the workshop format. I hope that
15 will ensue. I have today with me Doctor James Fenton, the
16 center director, the overall FSEC director, and he will be
17 available with me all through the day, through the coming
18 months as we work with these issues. And, of course, the
19 center is available as an agency of the state to help implement
20 and move forward.

21 I was asked to deal with a definition, basically set
22 the tone for how we handle definitions. I will attempt to do
23 that very quickly. The existing method or the traditional
24 method or definition of renewable portfolio has always been a
25 technology definition, a listing, a laundry list of

1 technologies. I threw a couple of samples up out of the
2 Florida Statutes. I'm not going to read them to you. They are
3 absolute methods. They focus on what is available, the
4 technology that we have today or what we can envision in the
5 near term, and they generally exclude things that we don't
6 envision, and then specifically include things that we know
7 about. So that is the way that we have done it before, and I
8 am here to suggest that we might think of a different approach.

9 And that is a more open-ended approach, definition by
10 attribute. We could be flexible. It is a results orientation,
11 and it allows for future technology changes and cost changes
12 and even things that we don't envision today. We can put in a
13 specific -- I call it a rider, if we want to see something
14 happen, some particular method happen. We can have set-asides
15 for some favored attributes. So I threw up an example. I'm
16 not going to read this either, but I mentioned the
17 three highlighted lines that here are three things that I
18 believe would be a key component if you define an attribute of
19 a renewable resource. And that would be that there is no what
20 I call extraneous limits. And there is always natural limits
21 on any resource. Like if there is no rainfall, you don't have
22 hydro. But I am talking about, essentially, man-made or
23 extraneous limits. The prime energy source is not limited by
24 regulation, by some type of problem in getting the resource.
25 And also that there are no -- the second thing, that there is

1 no environmental detriment from the acquisition of that prime
2 energy source. And, finally, that there is no net release of
3 carbon dioxide or other pollutants.

4 And then you can throw in a specific exclusion. I
5 picked one that I do not believe is going to be presented
6 today, and that is acoustic kryptonite hyperdrive technology.
7 I'm sure it is not going to be presented as an option, but that
8 could be excluded.

9 And then we can say things that we particularly want
10 to happen, that perhaps we want to say, you know, it's not a
11 renewable resource particularly that we would like to have,
12 that we would count loss reductions by the utilities and
13 reductions in operating losses as a qualifying resource.

14 And then we can say with a set-aside, and as from the
15 Solar Energy Center I picked a nice round number that no
16 less -- I have 10 percent, and then I put the number 20, so
17 that shows you I meant to be -- I said no less than 20 percent
18 of the energy required by this standard is derived directly
19 from solar energy.

20 So here are some -- a table. I'm not going to go
21 through this table. This is bound to be controversial. A key
22 point is up there where it says my opinion with the asterisk.
23 Some of these probably no one would argue with me about, and
24 some there would be some legitimate discussion. I put question
25 marks when I kind of don't know the answer in my mind, and I

1 said yes and no when I felt pretty sure about it to myself.
2 But, these are going through those three attributes and
3 basically asking those questions about the technology.

4 Then we can do something else with this approach, and
5 that is to look at electric energy displacement technologies.
6 Back from my proposal definition I said produced or directly
7 and quantifiably displaced. And here we can talk about such
8 things as absorption chilling from solar-assisted absorption
9 chilling, which is a big thing in the southern states and the
10 humid states, process heat, and any other type of active solar
11 thermal process that directly and quantifiably displaces
12 electric energy.

13 And then we can have -- of course, the attributes
14 don't really apply, but we can list improvements in efficiency
15 by the utilities, and go through that and say that they apply
16 as a resource. In all of these tables I left blank lines to
17 indicate that, see, if something comes up in the future we can
18 add to it.

19 I could not leave without this quote from Governor
20 Crist in his executive order, and he said with a strong focus
21 on solar and wind energy. So we have screened -- in my
22 proposal we have screened by attributes and now we are going
23 into what can be done to meet his charge. And so, I did some
24 quick calculations. These are reasonable assumptions. They
25 certainly can be debated, but we can get there with these

1 calculations. And what I found is between solar thermal
2 energy, domestic hot water and photovoltaics. And I apologize
3 for the long word, and we are going to have to get used to it,
4 but PV for short. But doing those two things by 2020 can bring
5 us somewhere in the order of four percent of the net energy for
6 load, which is roughly 20 percent of the RPS that we would be
7 looking for, as feasible and economic right up front. That was
8 without really stretching, not really hurting ourselves, not
9 making a -- doing anything really different than we are doing
10 today, but just doing more of it and doing it in an economic
11 way.

12 I thought it worthy to go through just some examples
13 for you of how we can expand solar energy. And in the PV area
14 I want to say that Florida really has no limits -- real limits
15 on land if you consider these different options that are being
16 done around the world in different ways. The linear of PV
17 farms along the median of a highway where there is a barrier
18 anyway is done in Europe, edge of transmission outside of the
19 working area. I have done some calculations in transmission
20 lines in Georgia where I recently worked in the transmission
21 area, and found out of 3,000 miles of right-of-way that we had
22 and throwing away a huge chunk and basically working with about
23 10 percent of it is not having problems, I came up with
24 600 megawatts on the back of an envelope.

25 We have a tremendous amount of parking lots in

1 Florida, and one was to make lemonade out of those lemons would
2 be to cover those things with canopies and use it to sell
3 premium parking spaces or to get more people to come to your
4 attraction or your shopping mall. That is available. Roof
5 tops are available.

6 I mentioned something here, I call it -- my phrase is
7 the four and 20 plan. That's not four and 20 blackbirds, the
8 children's nursery rhyme. That refers to the idea of if you
9 have a house, and it has good solar access, and you want to put
10 up -- typically 4 kW might be the maximum that you would want
11 to put on to serve your needs, why waste that infrastructure,
12 that space, that resource all to yourself. If your neighbor is
13 covered with tree canopy, or there is a commercial developer,
14 or a utility that wants to joint venture with you and put a 20,
15 or 25-megawatt, or 24 -- I sorry, I am back in the utility
16 business -- kilowatt system on your roof, that could be done.

17 In the thermal side, as natural gas continues to
18 climb in price, we can see a lot of things happen that have not
19 happened. We can create a common hot water system in apartment
20 buildings and meter the energy to the homes, and that allows an
21 entrepreneur or a utility to sell that energy.

22 And, of course, I mentioned absorption chilling,
23 which is not really done too much now, though it is commercial,
24 has great potential in Florida.

25 When I do all of these types of assessments that are

1 kind of a little further out, then I come up with 10 percent of
2 net energy for load is a likely solar resource.

3 So, wrapping it up here, the recommendation that I
4 would make is that we have an open-ended definition in statute,
5 in regulation that is prescribed by attributes rather than the
6 technology, and then approve the technology by some type of
7 simple process that allows -- because, obviously, you can't
8 have a vague -- you can't apply and get credit for something
9 that is vague. You do have to have a specific technology
10 approval, I recognize that. So I think that could be a lesser
11 process and much faster. And I do recommend 20 percent of the
12 RPS be a solar energy set-aside, and I think that would be in
13 keeping with the Governor's request.

14 I am going to take two minutes and do something a
15 little bit optional. It is to say -- I mentioned solar
16 thermal. You wonder how that could be an electric RPS. Here
17 is how. A little cartoon, hot water is not normally equal to
18 electric energy because it doesn't do what electric energy
19 does, run that second equation, run your stereo or do your
20 laundry, so that is the perception. The reality is that energy
21 is simply energy. One equals one. Thermal equals electric.
22 It is just energy. And it is defined actually, one definition
23 of a kilowatt hour which we sell our electric energy is that it
24 is what is needed to heat some water, a certain amount of water
25 one degree Fahrenheit under standard conditions. So the basic

1 definition in engineering often used is a hot water definition.

2 If you have subdivisions that don't have gas, and
3 that is most common today and certainly in Florida, you have
4 electric water heaters. If you put solar energy, solar thermal
5 water heaters you have less electric energy. If you meter that
6 energy, now you have displaced a measurable and verified amount
7 of electric energy, and one of those kilowatt hours equals the
8 electric kilowatt hour.

9 This is a lot less complicated than it looks, but I
10 bring it to you to say if you had a solar panel -- and I know
11 the Commission can't see my little pointer. But up in the
12 corner, if you have a solar panel, an electric PV panel and it
13 produces energy, and you meter it right there, and you present
14 that information to the green dial outside the box, everyone
15 agrees that that is green energy, that that is renewable. No
16 dispute.

17 Now, this system is completely normal. It is an
18 average system, and all of those other numbers are to do with
19 how much hot water is delivered, et cetera. So if we drop a
20 curtain over it, and we hear some construction noises and
21 ignore all that and pull the curtain away, you have a different
22 system. Thanks for your indulgence in the little cartoon here.
23 We have a thermal panel now, right here. And all of these
24 other things are exactly the same, the same numbers. We take
25 the metered energy in red, the red meter there, the red circle

1 and we delay it to a summing circuit with a plus. We take the
2 electric backup element and we delay it to that circuit with a
3 minus, and we take that output and deliver it out here to a
4 display, the same display. And pardon all of this summing type
5 technical talk, but we come up with the same numbers, okay, the
6 exact same numbers. And if you have a system that's -- the
7 input and outputs are the same, and you are inside of a box,
8 and you don't know what is in the box, why does it matter? And
9 I would submit that it doesn't.

10 How do we know they are identical? We measure it.
11 We meter it. And so the meter is important. And I suggest
12 that the output be displayed in kilowatt hours because that is
13 what we bill on. So, once you have gotten that concept
14 established, now you are ready to talk about these other
15 technologies, such as process heat and absorption chilling.

16 I recently served on an advisory panel to the
17 California Energy Commission where they exactly did the
18 complicated formulas and how that is done to quantify it. So
19 there is precedent for having all of that worked out.

20 And that leads me to say that there is in seven other
21 states, now, there is inclusion of solar thermal heat, solar
22 heat in the RPS. You can see the green dots there outside,
23 outside the southeast.

24 That would be my comments. The center is available
25 to help in any way, the monitoring, the verifying, the

1 advising. We are your at your service.

2 CHAIRMAN EDGAR: Thank you. Mr. Reedy, if you would
3 just (audio distortion). Thank you. A quick question. You
4 mentioned a suggestion that 20 percent of the RPS should be a
5 solar set aside. Could you speak to that for just a moment,
6 and why 20 percent?

7 MR. REEDY: Twenty percent of the RPS amounts to
8 four percent of net energy for load. And I found that
9 reasonably attainable without, as I said, without -- by
10 2020 without breaking any dishes, so to speak, causing any
11 economic -- in other words, asking people to do things that
12 they save money in doing, that type of thing.

13 CHAIRMAN EDGAR: All right. Thank you.

14 Commissioners, any questions for Mr. Reedy?

15 Commissioner Skop.

16 COMMISSIONER SKOP: Thank you, Madam Chair. Could we
17 get the revised PowerPoint presentation? Could you provide
18 that to staff, because our slides in our presentation booklet
19 are different from those presented.

20 MR. REEDY: I apologize. Like many speakers, I had a
21 last minute addition in my jump stick that I worked out on the
22 airplane, and I apologize. We will get that cleared up for
23 you.

24 COMMISSIONER SKOP: Thank you.

25 MR. REEDY: And I realize you had to turn around to

1 see them.

2 CHAIRMAN EDGAR: Actually we have it here right in
3 front of us.

4 MR. REEDY: Okay.

5 CHAIRMAN EDGAR: We are lucky. It's in front of us
6 and behind us.

7 MR. REEDY: I mean the record copy, too.

8 CHAIRMAN EDGAR: Thank you.

9 Okay. Our next speaker is Mr. Richard Zambo. If you
10 would please come forward.

11 MR. ZAMBO: Good morning, Madam Chairman and
12 Commissioners. I want to thank you for the opportunity to be
13 here. And I am going to try to share some of my thoughts with
14 you on defining renewables and things to do and not to do and
15 what we have learned from experience.

16 I would like to just clarify that my remarks are
17 being submitted on behalf of the City of Tampa, and the Solid
18 Waste Authority of Palm Beach County, and the members of the
19 Florida Industrial Cogeneration Association, which are
20 primarily the fertilizer manufacturers in Florida.

21 And our interests in the proceedings are two-fold.
22 First, we are large producers of energy from renewable -- from
23 renewable energy resources in the city and the authority using
24 municipal solid waste as their fuel and the fertilizer
25 companies using waste heat from the manufacturing processes.

1 And we are also very large consumers of electricity, so we are
2 interested in getting this right so we have the good reliable,
3 rightly priced electricity that we purchase, but still get a
4 fair price for our electricity when we put it into the
5 marketplace.

6 I just wanted to point out that many of the
7 Commission's current policies and rules that effect renewable
8 energy are largely a result of the federal law that was passed
9 in 1978, the Public Utility Regulatory Policies Act. And over
10 the course of implementing those rules and policies, certain
11 assumptions regarding the risk, reliability, pricing and
12 performance of these types of facilities were made. And
13 history has showed that some of those may need to be revisited
14 and reconsidered.

15 Quickly, exactly what PURPA was, it was part of the
16 National Energy Act of 1978 when we faced a similar situation
17 as we do today. We were very heavily dependent on oil for our
18 fuel resources, and PURPA's primary objectives were to reduce
19 our dependence on imported fuels and to reduce the utility need
20 to invest in new power plant.

21 PURPA accomplished this by creating for the first
22 time a class of nonutility generators called qualifying
23 facilities, or QFs, many of which would be considered renewable
24 energy under Florida law.

25 Specifically, PURPA created two types of generators,

1 small power producers which used nontraditional fuels. At that
2 time we called them alternative fuels, such as biomass, solar,
3 waste heat, et cetera. Co-generators use traditional fuels or
4 they can also use renewable fuels, but in a very efficient
5 manner by using the same energy source to produce electricity
6 and use for thermal energy. Today we call this combined heat
7 and power.

8 PURPA accomplished its objectives by requiring
9 utilities to interconnect with QFs. They exempted QFs from
10 utility regulation. They require utilities to purchase
11 electricity from QFs at avoided cost and require utilities to
12 sell electricity to QFs at nondiscriminatory prices.

13 Florida's experience with PURPA goes back to the
14 early '80s when Florida had a serious fuel diversity problem.
15 We were very heavily dependent on oil for electric production.
16 And in the process of adopting the rules to implement PURPA in
17 Florida, the Commission established policies that based avoided
18 costs for QFs on a statewide avoided coal unit, determining
19 that that best fit the operating characteristics of a majority
20 of the QFs around at that time, and it provided for uniformity
21 across the state by using a single unit to identify avoided
22 costs. That policy was very successful during the time it was
23 in effect from about 1983 to 1990. And although we don't have
24 exact statistics on that, that was a period in which the vast
25 majority of the existing nonutility generating capacity was

1 developed in Florida.

2 Around 1990, the Commission changed methodologies and
3 went to a next planned generating unit for individual
4 utilities. And as a result of that change in policy, capacity
5 payments, which are the payments that basically are required
6 to fund renewable energy facilities and the amount of those
7 precipitously dropped as did the amount of QF capacity that has
8 been developed in Florida since that time. But the Commission
9 has developed or adopted new rules recently that, hopefully,
10 will improve the climate for renewables, but there are some
11 important issues still to be addressed.

12 So what we are suggesting is as you -- we've got a
13 lot of experience with PURPA. As you move to renewable energy
14 and renewable portfolio standards that you take note of the
15 lessons you have learned and the experience that you have
16 gained in dealing with PURPA over these years. You should have
17 a pretty good idea of what worked and what didn't work and it
18 would help you reach conclusions or decisions with regard to
19 renewable energy much more quickly.

20 So what is renewable energy? From our perspective,
21 it really depends on how you want to look at it. It's where
22 you are standing and what are your objectives. Renewable
23 resources can vary significantly by region, by state and some
24 regions and states can have indigenous resources that others
25 don't. The definition should be broad enough to include all

1 the resources that we have in Florida and should also include,
2 but not be limited to, those resources identified in the
3 Florida Statutes.

4 Florida is rather unique because our geography,
5 geology and topography. It has effects on our energy
6 characteristics. A vast majority of our fuel needs are
7 imported from significant distances. We don't have indigenous
8 fuel resources. We import oil, we import coal, we import
9 natural gas, those are all subject to interruption and
10 reliability concerns. Little of Florida's electricity needs
11 are imported from bordering states. Because of our peninsular
12 nature, we only border with a few states to our north, and the
13 interchange capability across those borders is fairly limited.

14 Florida has unique renewable energy characteristics,
15 although to this point we haven't developed much in the way of
16 geothermal, hydro or wind. We do have it seems like a
17 tremendous potential in solar, solid waste and landfill gas,
18 waste heat, biomass, agricultural, forest product residues,
19 ocean energy and similar resources. And I'm sure there are
20 other technologies out there that will develop if there is a
21 fertile environment for it.

22 The definitions in the Florida Statutes, I have just
23 put them all together and kind of combined them there. And
24 similarly, I won't read them to you, but it's a pretty good --
25 it's a pretty good shopping list, and it follows up on what

1 some of the previous speakers have mentioned about the great
2 potential that we have in this state.

3 And I wanted to just mention briefly the attributes
4 of renewable energy, some of the attributes of renewable energy
5 that are important to keep in mind in establishing the RPS, and
6 that is renewable energy facilities typically are dissimilar to
7 utility facilities in that their construction cycles can be
8 significantly shorter. They are dissimilar because their fuel
9 source is not subject to the types of price fluctuation or
10 supply interruption that could be associated with traditional
11 fuel sources. They are dissimilar to utility plants in that
12 they are either carbon neutral or produce no significant
13 greenhouse gas emissions.

14 But they are similar in -- especially in the case of
15 the folks I am speaking on behalf of today. They are similar
16 to utility base load power plants in that they operate at
17 higher capacity factors that displace natural gas, oil, coal
18 and reduce average energy costs and reduce emissions. And I
19 specifically refer to the types of facilities my clients
20 operate because they are basically 24/7 type operations. They
21 operate around the clock. And we realize there are other types
22 of facilities that may not operate that way, and we would need
23 to address those, as well.

24 So how do you go about establishing a renewable
25 portfolio standard? We would suggest initially that the

1 Commission not be too concerned with the potential magnitude of
2 renewable energy that may develop. Rather, the Commission
3 should focus on prices and policies that accurately represent
4 the value, and then let the markets work and see if you guessed
5 too high or too low.

6 Similarly, the Commission should not be too concerned
7 with the risk that prices for renewable energy might exceed
8 avoided cost. That is something that we hear a lot when we are
9 talking about prices for renewable energy. In fact, the risks
10 are much higher if we fail to encourage renewable energy. And
11 as a case in point without divulging names, two recent utility
12 and natural gas power plant additions that were approved by the
13 Commission went in operation in early 2000. In less than the
14 first four years of their operation, their actual fuel costs
15 have been \$450 million more than were projected in the
16 proceedings that justified those plants. And that increased
17 cost, over 40 percent more than projected, is passed on
18 directly to the customers, and it has absolutely no effect on
19 the utility. So it is important not to put too much emphasis
20 on how risky renewable energy systems might be, because utility
21 systems can be fairly risky on their own.

22 We believe the Commission should establish a goal on
23 a percentage basis for the amount of renewable energy to be
24 included in Florida's electric generation mix. The Governor
25 has indicated 20 percent, which we say would be the minimum.

1 You could consider more than that, I suppose, if you wanted to,
2 but I think 20 percent is probably a reasonable starting point.
3 The RPS should be established as a percentage of electrical
4 energy sold at retail within Florida and measured in kilowatt
5 hours or megawatt hours on a 12-month rolling average basis.

6 And we would also suggest a phase-in of the RPS, and
7 I put some numbers up here for example, but that 10 percent by
8 2010 may be a little aggressive, but in my example I've got
9 10 percent by 2010, and then increasing at two percent
10 increments. Actually, that should be about one percent
11 increments until 20 percent of the electricity sold at retail
12 would be produced by renewables.

13 With respect to tradable energy credits, renewable
14 energy credits, I think if the purpose is to help Florida, help
15 Florida's economy, help Florida's environment, I think you need
16 to limit tradable renewable energy credits to those facilities
17 located in Florida; or if you allow them to go outside the
18 state, they should only be permitted to go outside the state if
19 the energy produced by those facilities can actually be
20 delivered into Florida to offset generation, offset emissions,
21 offset fuel use within the state.

22 Avoided cost pricing. Avoided cost payments for
23 renewable energy facilities should be based on the avoided unit
24 which most closely resembles their operation, fuel diversity
25 and price stability characteristics. For example, a large base

1 load solid fuel plant may be appropriate for the larger capital
2 intensive base load renewable energy facilities. A peaking gas
3 or liquid fuel plant for smaller non-base load renewable
4 facilities or other. There are other pricing mechanisms
5 depending on the technologies that may develop over time. And
6 as well as in addition to pricing, it is also important that
7 the terms and conditions under which renewable facilities sell
8 their power to utilities need to be fair and reasonable and not
9 serve as a disincentive to renewable energy.

10 I mentioned earlier that there were still a few
11 issues to be addressed, and this is my last slide, so I will
12 wrap it up. These are questions that over the years have come
13 up, and we have never really -- we, meaning my clients, we've
14 never really tried to run them down, because they just seem to
15 be so formidable. But now that we are in this forum, I think
16 maybe there is an opportunity to look at some of these things a
17 little bit closer.

18 You know, renewable energy facilities are supposed to
19 be paid avoided cost, that is supposed to be the top tier. The
20 highest price during each hour. But we find in looking back
21 through records that there are many periods of time when the
22 avoided cost is lower than the average cost, which
23 mathematically doesn't make sense. We have seen situations
24 where interruptible customers who have an option to buy-though
25 power during periods of interruption, or the utility actually

1 acts as their broker, and they go out in the marketplace to buy
2 power at whatever price is available, the buy-through prices are
3 often significantly higher than what that same person or same
4 company is receiving for the energy it is putting onto the grid
5 during that same time. It doesn't make sense. It makes me
6 wonder if avoided costs are being calculated properly.

7 Why are Florida utility nonregulated affiliates
8 investing in electric generation by renewable energy in other
9 states but not in Florida? Are the markets more prime in those
10 other states? Are the prices better in those other states?
11 Maybe we should ask them what prices they need to be able to
12 invest in those same types of plants in Florida.

13 Why is it acceptable for a customer to bear all the
14 risk of utility fuel choices, but not acceptable to bear any
15 risk from renewable energy facilities? And why do the terms
16 and conditions of standard offer contracts differ from utility
17 to utility? It complicates the job of the renewable energy
18 producer. I can see where they would differ based on prices,
19 but as far as all the boilerplate in the contract, I see no
20 reason why those shouldn't be the same.

21 So those are some thoughts. I hope they are helpful
22 to you, and that is pretty much all I've got. So if you have
23 any questions, I'll be happy to try to answer them.

24 CHAIRMAN EDGAR: Thank you, Mr. Zambo.

25 Commissioners, any questions at this time?

1 Commissioner Skop.

2 COMMISSIONER SKOP: Thank you, Madam Chair. With
3 respect to your suggestion for modeling the avoided cost
4 pricing, wouldn't those suggestions substantially impair and
5 inhibit the deployment of wind and solar to the extent that you
6 are trying to model them against a peaking unit on Slide 17,
7 but in actuality the cost for those renewable sources are
8 substantially above what a peaking unit would cost to install?

9 MR. ZAMBO: Well, I think I left myself a safety net
10 under there, others, depending on the technology. And, you
11 know, I don't have an answer for you, but some of the things I
12 thought of were taking an average cost of maybe a combustion
13 turbine and a coal plant doing some -- figuring out where -- I
14 guess, first of all, you need to know where the wind technology
15 was producing its power at what point in time. I think it
16 could be a fairly complicated analysis, but once you identified
17 the characteristics of them, I'm sure that we could come up
18 with a reasonable or a proxy for pricing.

19 And I agree, you need to have -- you need to have the
20 economic incentive on the front end. And I will be honest with
21 you, I am here on behalf of the larger base load units. I
22 didn't put a whole lot of thought into it, but I understand it
23 is an issue. And I wouldn't have any problem with using that
24 same -- that same approach for all of them, if that works for
25 them.

1 COMMISSIONER SKOP: Thank you.

2 CHAIRMAN EDGAR: Commissioners, further questions?

3 Not at this time.

4 Mr. Zambo, thank you very much.

5 And our next speaker is Mr. Dick Lowry with Sharp
6 Electrics.

7 Mr. Lowry, welcome.

8 MR. LOWRY: Good morning, Commissioners. Thank you
9 so much for the opportunity to come and speak on behalf of our
10 Sharp Electronics. My name is Dick Lowry. I am the associate
11 manager of government relations for Sharp Solar Energy
12 Solutions Group. Sharp is fairly well-known for our flat
13 screen televisions. But what is not well-known is that for
14 about six years running we have been the worldwide leader in
15 production of solar cells with about 26 percent of the market
16 last year. We have been making solar cells since about 1959,
17 and I would like to point that out because we like to say that
18 solar is not an alternative energy. It is actually a proven
19 technology that has been proven over the past almost 50 years.

20 This is a list of some of the benefits that a growing
21 PV market can provide in the -- I'm sorry. I skipped slides
22 here. This is a list of the benefits that solar PV can provide
23 as opposed to traditional energy sources, as well as some other
24 renewable energy sources. Solar doesn't have any air
25 pollution, water pollution, noise, solid waste, radiation risk.

1 No new transmission lines are needed, and there is no cooling
2 water needed.

3 These are projections of benefits in regards to CO2
4 on the left and job creation on the right as solar markets grow
5 throughout the world. And I'm sorry if I am jumping through
6 this quickly. I know that we have a rather large agenda, and
7 I've got a bit of -- a good number of slides here.

8 Solar also provides high quality jobs, not just jobs
9 in general. People generally think of manufacturing when they
10 think of job growth, but solar also creates jobs from system
11 integration sales to, you know, in my case government
12 relations. California currently has approximately 4,000 jobs
13 in solar. Germany is up to around 20,000.

14 With this slide I would like to start by pointing out
15 that this is strictly historical data. These are not
16 projections at all. The solar industry is growing
17 exponentially and costs are falling. We would very much like
18 to see Florida participate in this growth, and that is what I
19 am here to talk about today.

20 This is a map of solar insolation. Solar insolation
21 is a measure of the amount of solar energy hitting the earth in
22 a particular area over an entire year. On the right we have
23 the U.S., of course, and on the left that is Germany. Germany
24 is far and away the largest market for photovoltaics in the
25 world right now. And I point this out to show that Florida has

1 twice the solar resources that Germany does. I have heard
2 rumors that people are saying that the sunshine state does not
3 have enough sun to support solar. That is simply not true.

4 Here are some results from a recent Mason-Dixon poll.
5 I believe it was conducted in February of this year, showing
6 that 78 percent of Floridians would support investment in solar
7 energy if it would cost them a dollar or less per month in
8 addition to their regular utility bill. We can see there on
9 the bottom that is 76 percent of Independents, 71 percent of
10 Republicans, and 81 percent of Democrats would support that
11 investment.

12 This is a list of the states that have RPS policies
13 currently. I believe it was said earlier that there were 27
14 states with RPS policies. I think the numbers are simply
15 different, because I believe that these policies are mandatory
16 and there are a few states that don't have mandatory policies,
17 but have targets.

18 So I will move on from my yea solar speech to what
19 aspects of an RPS are needed to develop a market for solar here
20 in Florida. There are five major aspects that we think are
21 needed in RPS. One is an explicit solar share, tradable
22 renewable energy credits, or solar renewable energy credits, an
23 alternative compliance payment mechanism, provisions for
24 long-term contracts, and a provision for small systems. Solar
25 carve-out is -- actually, Bob Reedy kind of covered that

1 subject. He mentioned what we in the PV industry are pushing
2 for here in Florida, which would be a two percent carve-out for
3 solar. That would be what he referred to as 10 percent of the
4 overall 20 percent RPS.

5 Another method of encouraging solar that is used
6 across states is called a multiplier, where energy from solar
7 is essentially worth more towards your RPS goals than other
8 technologies.

9 As this next slide shows, the top states there use
10 credit multipliers. As you can see most of them have not had
11 much impact on the solar market. Whereas, the states that have
12 solar carve-outs in the bottom half of the slide are very
13 actively installing megawatts on rooftops. We very strongly
14 support a solar carve-out within Florida's RPS.

15 The next feature of an effective RPS is tradable
16 RECs, renewable energy credits. When a megawatt hour of energy
17 is produced from a renewable's resource one credit is produced.
18 Here the key point is that -- what this does is it leverages
19 private investment. Homeowners, businesses, government
20 entities, which wouldn't be private, but can invest in
21 renewable energy, can invest in a solar system on their
22 rooftop, and the utility is simply required to purchase the
23 RECs from them, rather than having to bear the entire cost
24 themselves.

25 The next attribute is an alternative compliance

1 payment. This is simply a fine placed on utilities that are
2 not meeting their share of the RPS obligation. The ACP plays
3 two very important roles. First, it gives utilities a
4 financial incentive to meet their RPS obligation. The second
5 is that it gives the renewable energy credits a value over the
6 long-term. It essentially creates a scenario whereby utilities
7 would be willing to pay for a renewable energy credit as long
8 as that -- as long as the price of that credit is lower than
9 the alternative compliance payment.

10 The next attribute necessary to spur development of
11 the solar market would be a provision requiring long-term REC
12 contracts. Medium and large sized solar systems can be rather
13 expensive and in order to secure financing they need the
14 security that long-term contracts provide in order to know that
15 their investment will generate revenue over that long-term. We
16 recommend 15 years for long-term contracts. This is about half
17 the expected life of a system.

18 The last option we'd like to discuss is up front
19 payments for smaller systems. Homeowners, for instance, can't
20 afford to pay the full price of a system up front and then
21 depend on the future revenue that renewable energy credits will
22 provide. They need that up front payment for those RECs over
23 the 15 years when they purchase the system in order to be able
24 to afford it. Again, this encourages job creation because you
25 create a market for more distributed generation, you have more

1 installers, salespeople, et cetera. We want to see the market
2 grow both through installation of large systems as well as the
3 smaller distributed systems.

4 And with that, I will just end with, again, the five
5 bullet points that we think an RPS needs to spur solar here in
6 Florida.

7 CHAIRMAN EDGAR: Thank you. And I think we do have a
8 few questions.

9 Commissioner Carter.

10 COMMISSIONER CARTER: Thank you, Madam Chair.

11 I think I need to pull it closer. Can you hear me
12 now?

13 You can hear me, right?

14 MR. LOWRY: I can hear you.

15 COMMISSIONER CARTER: Great. On your slide that
16 showed the juxtaposition between Germany and the United States.

17 MR. LOWRY: Yes.

18 COMMISSIONER CARTER: What is your basis for that? I
19 mean, I have heard over and over that Florida is the sunshine
20 state in model, but not with the actual availability of solar
21 coverage.

22 MR. LOWRY: A lot of times what people like to do is
23 point out that it has less than, say, Arizona or New Mexico,
24 that you can see on the chart there do have greater solar
25 insulation. But as you can see, the map of Germany there has

1 very low solar insulation, and yet their market is booming.
2 The source of this particular graphic, I believe, is from a
3 company called Navigant, but I think this data is very easily
4 available. And if you would like me to get a source and
5 provide it to you and your staff, I would be happy to do that.

6 COMMISSIONER CARTER: One follow-up, Madam Chair.

7 Thank you. We would like you to get that to staff,
8 and just kind of a follow-up. This map in the context of your
9 presentation, is there a juxtaposition of the market? I
10 noticed you mentioned some states where they had a -- I don't
11 want to say booming, but certainly had an ongoing market for
12 solar. Does that correspond with the chart that you have done
13 here?

14 MR. LOWRY: Are you referring to the chart that's the
15 solar insulation chart?

16 COMMISSIONER CARTER: Yes. Does the market follow
17 the --

18 MR. LOWRY: No, not necessarily. The market follows
19 the policy, which is why we are here trying to push for good
20 solar policy in Florida. As you can see, Germany has less
21 solar insulation than pretty much anywhere in the United
22 States, yet they outpace anywhere in the United States by far.
23 They have solid policies. California has solid policies. That
24 market is booming. New Jersey has solid policies. That market
25 has done very well. The megawatts follow the policy.

1 COMMISSIONER CARTER: Thank you, Madam Chair.

2 CHAIRMAN EDGAR: Thank you. Commissioner Skop.

3 COMMISSIONER SKOP: Thank you, Madam Chair. I would
4 like to draw your attention to the slide I believe on Page
5 4 where it was strong public support for solar in Florida. The
6 next slide. That slide.

7 Noting that solar perhaps is probably the most
8 expensive source of renewable energy on a kilowatt hour, and as
9 being fiscally conservative, I kind of cringe in asking this
10 question, but you've opened the door. With respect to that
11 survey -- and, again, I can't read the fine print to ascertain
12 the sample size or the source of the survey. But would you be
13 advocating for perhaps a renewable energy surcharge by virtue
14 of this survey that was performed?

15 MR. LOWRY: At this point that is not what we are
16 looking for right now in Florida. That is what California
17 does. And I believe later this afternoon, a colleague of mine,
18 Gwen Rose from Vote Solar will be going over the cost of a
19 potential -- of the solar policies that we are advocating here,
20 which is the two percent solar carve-out. And we looked at the
21 two percent and came to that. And, again, that is two percent
22 for PV, potentially four percent for all solar technologies.

23 We came to that by looking at -- at making sure that
24 we would not increase costs by more than one percent and
25 keeping it under that one percent cap. And, again, Gwen will

1 go into the details of the financial numbers there.

2 COMMISSIONER SKOP: Thank you.

3 CHAIRMAN EDGAR: Thank you.

4 Commissioner Carter.

5 COMMISSIONER CARTER: This is kind of a follow-up on
6 Commissioner Skop's question. Wouldn't this -- I guess it
7 would be a dollar or less per month. Would that be applicable
8 to every utility customer statewide?

9 MR. LOWRY: Again, this was just a question to gauge
10 the support for solar by individuals. Again, if there were any
11 sort of surcharge assessed, it would be assessed differently
12 to, you know, companies using large amounts of energy as they
13 are to homeowners. This was just asking, essentially,
14 homeowners, individuals, if on their home utility bill they
15 would be willing to pay a dollar or less. And 78 percent
16 supported it, which shows overwhelming support, but does not
17 really get into the details of how an actual policy would
18 function in the state.

19 COMMISSIONER CARTER: But this group of homeowners is
20 statewide?

21 MR. LOWRY: Yes. Yes. The poll was conducted by a
22 third party, Mason-Dixon. And, again, as you noted, the fine
23 print is very fine down there.

24 COMMISSIONER CARTER: Yes.

25 MR. LOWRY: But it was a large statewide sample size.

1 CHAIRMAN EDGAR: Thank you.

2 Commissioner Skop.

3 COMMISSIONER SKOP: Thank you, Madam Chair. One
4 follow-up to Commissioner Carter's question. I guess the cat
5 is somewhat out of the bag. And, again, I think there are some
6 problematic issues associated with perhaps going down that
7 path. And a dollar per month per customer is a huge impact to
8 the customer base, but, again, my question was more generically
9 framed in terms of renewable energy surcharge probably at a lot
10 lower amount, if you will. But I do think there are some
11 collateral issues in going down that path, and I would
12 encourage other speakers today to opine on that issue with
13 respect to the Commission's jurisdiction in terms of only
14 regulating the IOUs, you know, to make it applicable on a
15 statewide basis. I think there are some problems there as I
16 have kind of, you know, discussed with staff already a little
17 bit. But the munis and co-ops and such that don't generate
18 their own electricity, I think there is a lot of issues that
19 would fall into that if we should look in that in a rulemaking
20 context or the Legislature would want to act in that area.

21 Thank you.

22 MR. LOWRY: Again to that, I just want to make it
23 very clear we are not advocating for a surcharge in any way.
24 We are advocating a two percent carve-out of the RPS that would
25 be a requirement placed on utilities. And the two percent is

1 based on not increasing the utility's costs by more than one
2 percent. So we agree that there are a lot of issues with a
3 surcharge on rates; and are, therefore, advocating for a
4 different policy.

5 CHAIRMAN EDGAR: Commissioners, anything further?

6 Mr. Lowry, thank you very much.

7 MR. LOWRY: Thank you.

8 CHAIRMAN EDGAR: Our next speaker is Ms. Camille
9 Coley, Assistant Vice President of Research, Florida Atlantic
10 University.

11 Ms. Coley.

12 MS. COLEY: Good morning, Chairman Edgar and the rest
13 of the Commissioners. I want to thank you for the opportunity
14 to present our Florida Center of Excellence in Ocean Energy
15 Technology that is based at Florida Atlantic University. What
16 I am presenting today is our center's thinking, and our work on
17 clean non-carbon emission emitting energy resources for
18 Florida's future.

19 I want to explain a little bit about our center and
20 how we came to existence. We are funded by the state of
21 Florida at the tune of \$5 million. We were funded under a
22 program that is administered by the Florida Board of Governors
23 through the Florida Technology Research and Review Board. Our
24 proposal was submitted with other university proposals, over 32
25 proposals, to be exact. And there were six proposals that were

1 selected for funding, and ours was ranked second in that
2 competition.

3 Our center director is Dr. Rick Driscoll. He's the
4 brains behind the technology that I am going to describe to you
5 today. And through this presentation our center hopes to
6 communicate that ocean energy is a promising clean resource
7 that in the near future could contribute to meeting Florida's
8 energy needs in a way that is protective to the environment.
9 We hope that the Commission and the other stakeholders will
10 recognize and support our center's efforts, which are directed
11 at making Florida a center for ocean energy technology, which
12 is an area of clean energy and which Florida has the potential
13 to be a world leader.

14 I am sure everyone is aware of this, that Florida's
15 current demand or future demand exceeds its current capacity.
16 And that Florida's energy crisis is reflected in terms of
17 supply and demand, and our reliance on external sources and the
18 environment. What we are saying as the bottom line is that we
19 don't have the resources at the present time to keep up with
20 the future demand. And that up to 80 percent of the current
21 capacity of hydrocarbon is -- current capacity is hydrocarbon
22 based and that the high cost of fuels, fossil fuels, that is,
23 is passed on to the customers. And we are dependent on outside
24 states and countries to provide us with the means to generate
25 this electricity.

1 Our center believes, and it is our contention and
2 hypothesis, that ocean energy is very promising and sustainable
3 and a renewable solution to the crisis as it exists.

4 The next conversation we will have is about what we
5 are doing specifically in our center and the technologies that
6 we are focusing in on. We are focusing on thermal energy and
7 current energy. I'm sure you have heard the terms tidal and
8 wave, but that's not the focus of our center.

9 What you are looking at here is a depiction of the
10 currents globally, and what you will see with the red dot -- I
11 mean, with the red lines that are very close to Florida's coast
12 and that are very dark is that the current along Florida's
13 coast is very strong. We have concluded through our research
14 that the southeast coast of Florida is the best location to
15 pursue the development of ocean renewable energy technologies,
16 and that there is no other location with such energy dense
17 current and thermal gradient close to a load center with
18 potential for continuous production of power.

19 As you will see here, it focuses closely in on
20 Florida's coast, and you will see how close that current is to
21 the coastline. The technologies that we are developing are
22 using also hydrogen technologies that we are working with the
23 University of Central Florida with the Florida Solar Energy
24 Center in their hydrogen component.

25 What we also have found, in addition to being the

1 closest to the major load center for the current, is also the
2 fact that there is a gradient of temperature that is close to
3 the coast that we would be able to use to produce AC -- power
4 AC through cold water. And the chart to the right bottom shows
5 the different radiant current -- the radiance of temperature
6 along the coast.

7 The ocean is an energy rich source. It is the
8 largest solar collector in the world, and we contend that less
9 than one percent of the available ocean current and thermal and
10 wave and tidal energy could meet the world's needs, although we
11 aren't focusing specifically on wave and tidal energy with our
12 center.

13 Some of the other benefits of the technology that we
14 are developing are the minimal structure on the ocean surface.
15 The turbines that we are using, and I will show you this in a
16 pictorial later in my presentation, are only tethered to the
17 bottom by an anchor, by a concrete anchor, and they flow in the
18 current. And as you are aware, I'm sure, the current meanders
19 at different points as -- you know, its width is very different
20 at different points. But where we are located, our university,
21 we have 150 miles of coastline between our southernmost campus
22 and our northernmost campus. It is really a prime location to
23 develop these technologies. What we also contend is that the
24 ocean energy technology matches or is close to matching the
25 demand in Florida.

1 One of the things that we had recommended in our
2 proposal focusing in on is fresh water byproduct. We have not
3 been able to do that under the current funding, but are looking
4 into potential technologies for potable water and irrigation.

5 Ocean energy has enormous potential, and I think that
6 we shall be seeing it in the short future as soon as we are
7 able to get our test facility in the water.

8 What you are looking at, as I talked about, was some
9 of the hydrogen systems. I am not as well versed in this,
10 since this is part of the component from the University of
11 Central Florida. But as you will see to the right under the
12 grid, that is looking at our turbines and generators. But we
13 are also talking about putting fuel cells on the ocean floor,
14 and that will be shown in the pictorial later, that would pick
15 up the hydrogen storage by boat or we would ship it to shore by
16 pipeline and then truck it to its final destination.

17 And here is the pictorial that I was talking about.
18 In the upper right corner you will see the coal plant, and it
19 disappears as we slowly get out into the depths of the water
20 where our technology will be based. Right there to the right
21 is one of the hydrogen facilities that we have talked about.
22 And then you will see the turbines actually spinning in the
23 water generating energy.

24 As you will see, we are out a little ways. What you
25 will also notice is that there is very little apparatus, or

1 equipment, or technology on the water's surface. The
2 technology is running constantly. The wonderful thing about
3 the Gulf Stream is that it runs 365 days a year, seven days a
4 week, 24 hours a day, and it is continuous and nonstopping.

5 And right there you will see the cold water
6 generation. What we are looking at with cold water generation
7 is actually dealing with the condos that are along the
8 southeast coast of Florida and trying to reduce the electricity
9 needed to generate the AC systems in those complexes.

10 The test site for our initial deployment of
11 technology is adjacent to Lauderdale-by-the-Sea. It's out in
12 federal waters. We have been in communication with the
13 Minerals Management Service, and FERC, and NOAA regarding
14 permitting of the technology that we plan to place out there.
15 Our initial test site will also only have one turbine out there
16 with 3-meter blades, and we will be monitoring it day and night
17 for at least a week is the initial projection of how long we
18 will able to place the technology out there.

19 And there you will see the ships that will transport
20 the hydrogen back to the coast, and you will see the wonderful
21 lit coast of South Florida that looks beautiful with our clean
22 energy.

23 Potential impacts. Within ten years we expect to be
24 able to reduce the electricity consumption for the AC based
25 power. We are also looking at the possibility of being able to

1 provide and contribute to meaningful amounts of reduction in
2 using fossil-based fuels. Within 20 years we are looking at
3 having a substantial impact to offset and possibly replace some
4 of the fossil fuel generation. And then we are also looking to
5 enhance or increase Florida's energy independence.

6 There are also a couple of economic impacts. We are
7 looking at workforce development. With the new technologies,
8 obviously, we are going to need workers that are versed in
9 ocean energy technology. Our university is working on a
10 curriculum in alternative energy technology. The other
11 economic impacts include technology sales and just the
12 manufacturing of the new technologies.

13 Okay. Here is my why slide. Why here? Why us? Why
14 the oceans? As I said before, Florida's demand for energy
15 continues to grow, and we need to look for long-term
16 sustainable, economically viable, and environmentally friendly
17 solutions to our problems. As I said also, Florida has --
18 well, South Florida in particular has surpassed the capacity of
19 fresh water resources. And, in fact, as many of you are aware,
20 we are on water restrictions, and we also have had permits
21 denied, building permits denied because of those restrictions.

22 There is also the why of there being little resources
23 to build the conventional power plants and desalination plants
24 for water. And the fact of the matter is location, location,
25 location. We are exactly pinpointed in a very good location to

1 develop these technologies to their fullest potential.

2 The commercialization potential of ocean energy also
3 is looming very near. As I said, we are planning to put our
4 first test site in the water sometime in September. And if you
5 guys are around, we invite you to come down and see that
6 launching of those test facilities.

7 I'm going to talk a little bit about the vision of
8 the center. We are a collaboration of government, obviously
9 the academia, and industry. And the Navy is government, but
10 the Navy is right there at our doorstep, and we are integrally
11 involved in conversations with them about the expansion of the
12 center and the growth of the center. We are also, interesting
13 enough, sort of the gap between what has been concept. A lot
14 of people have had ideas out there about ocean energy
15 technology, but have not been able to actually implement it.
16 One of the things that we are planning on doing is going to
17 be -- one of the key pieces of our center is the fact that we
18 are going to have a testing range where other commercial
19 vendors can come and test their products with us and link them
20 to some of the current technology that we are exploring
21 ourselves.

22 Here is a diagram of sort of the partners in the
23 center. We are integrally involved with Florida Power and
24 Light, since they are our service territory and our provider.
25 We have been in conversations with them about ocean energy

1 technology and the use of it in their renewable portfolio.
2 They have explained to us that they are very well versed in
3 wind technologies and some of those technologies are very well
4 applicable to ocean. our problem has been or the problem has
5 been with ocean technology. And people always ask why now? It
6 is because it hasn't been developed to the point where it is
7 now. The technologies are there, and we are ready to turn
8 things on and some of the wind technologies are definitely
9 transportable to the ocean energy technology that we are using.

10 Our biggest problem, though, is corrosion and that is
11 something that we have been working on at the university for
12 over four years. We have a center. It is specifically
13 dedicated to corrosive issues. The salt water environment is
14 very harsh. So we are going to have to convert a lot of things
15 to make them applicable in our ocean waters.

16 The industry partners are involved with technology
17 and expertise. As I said, we are right next door to the Navy
18 testing range. The Southeastern University in South Florida is
19 providing their expertise in environmental and oceanographic
20 issues. We are working with Florida State on power grid and
21 electrical distribution and reliability issues. As I said, we
22 are working with the University of Central Florida on the
23 hydrogen issues. And we just have been joined with Harbor
24 Branch as of this legislative session, and so they are working
25 with us on some of the ocean engineering technical issues of

1 the project. And we are working, obviously, with government at
2 the state and federal level.

3 There has been legislative interest in our center.
4 We were on Capitol Hill in March, invited by Congressman Kline,
5 who represents our Boca campus, to present to the Florida
6 delegation and their staff on this project. We also spoke in
7 March to the Joint Public Utilities Commission of the Florida
8 Legislature on this project, and we have been in conversation
9 with the Governor's office.

10 Our ultimate goal coming out of our center is
11 affordable, clean renewable energy, and energy independence,
12 and a vibrant new industry for the state of Florida. That is
13 one of the things that the Technology Review Board that
14 reviewed our proposal was very keen on seeing for the state of
15 Florida. Some of the initiatives that are coming out of the
16 center include establishing a full station energy technology
17 center spurring the seed industry for ocean energy technology,
18 our environmental research and impacts, all the data that we
19 have been gathering. In fact, the test site that we are using,
20 we have over three to four years of data because we have been
21 collecting data on that specific site. We had looked at some
22 other sites that are good alternatives, but we didn't have the
23 data, so we are going to go ahead and use the test site that we
24 already -- that we've been planning to use.

25 In conclusion, I wanted to say that the renewable

1 power source policies that you are -- portfolio standards that
2 you all are discussing today, we really haven't delved into how
3 ocean energy would fit into that. We are looking at two years
4 before ocean energy is really commercially viable in the sense
5 that we will be producing power that people in their homes will
6 be using. And so we would like you to consider this in your
7 future deliberations but, you know, we would like to say that
8 ocean energy is not going to be the end all and be all. It is
9 going to be a compilation of renewable resources or alternative
10 energy resources that are going to make up how Florida is going
11 to deal with its energy independence, or creating a situation
12 where we can deal with our energy problems, or -- I don't like
13 the word crisis, but our crisis as it so exists.

14 And I would like thank you, and I am free to take any
15 questions.

16 CHAIRMAN EDGAR: Ms. Coley, thank you so much.

17 Commissioners, any questions?

18 Commissioner Skop.

19 COMMISSIONER SKOP: Thank you, Madam Chair. And
20 thank you for appearing this morning. I have actually spoken
21 to Dr. Driscoll personally --

22 MS. COLEY: Excellent.

23 COMMISSIONER SKOP: -- with respect to his efforts
24 and what he is doing. And I also agree that the person who
25 successfully brings this technology to market on a

1 cost-effective basis will probably be the next Bill Gates.

2 MS. COLEY: I think so, too.

3 COMMISSIONER SKOP: But that being said, I just want
4 to clarify what stage of development that your technology is
5 in. My understanding, and that may have changed since I have
6 spoken to him a couple of months ago, but this is still in the
7 incubator stage of, you know, small scale testing.

8 MS. COLEY: Absolutely.

9 COMMISSIONER SKOP: And not ready for commercial
10 deployment.

11 MS. COLEY: No.

12 COMMISSIONER SKOP: Okay. And then also what -- I
13 guess I do agree, and I have been in the Gulf Stream, and I'm
14 fully aware of the currents out there, which are strong. But
15 what consideration, if any, has been given to protecting the
16 installed devices, which I'm sure will probably be pretty
17 expensive, from either shipping or recreational interest? I
18 know the deeper that you go offshore, the further you go for
19 deep water technology, you probably incur additional costs, but
20 you gain the benefit of protecting them from fishermen or other
21 things like that. So can you speak to that, or other
22 environmental, or marine life issues that you guys have been
23 looking at?

24 MS. COLEY: Sure. One of the things that we are in
25 the process of doing is bringing in the stakeholder groups that

1 you are talking about, bringing in the cruise lines, and the
2 boaters, and the fishers to explain the technology to them
3 first and have their input into how they feel that it is going
4 to affect their industries or if it will affect their
5 industries at all.

6 The test site that we are looking at actually off of
7 Lauderdale-by-the-Sea, we are going about six to ten miles off
8 the shore. And we have been out there at night and looked and
9 there are a lot of fishermen that are out there, and we know
10 that they are going to have some concerns. So our initial take
11 on this is that we are going to invite the stakeholder groups
12 to look at what we are doing so that they can assess it.

13 But on the technology side, we are actually
14 installing or planning to install sonar into the technology
15 that we are building so that, you know, people who have GPS can
16 actually see it and track it and know to avoid it and stay away
17 from it. And, also, we are looking into placing where the
18 fields, as we are calling them, of turbines on the maps of the
19 shipping channels.

20 COMMISSIONER SKOP: In the interest of time, one more
21 quick question. In terms of your technology, how does that
22 compare to other commercially available technology? I am just
23 using a hypothetical example. Yes. There is a company called
24 Clean Current who is a little bit more advanced in the process,
25 and they use a ducted blade or a ducted fan augments type

1 implementation. So on an efficiency basis or comparable
2 technology basis, has any consideration been given towards what
3 you are developing and how is that superior to what may already
4 be emerging in the marketplace in terms of emerging
5 technologies?

6 MS. COLEY: I am afraid I can't speak to that. That
7 is a Doctor Driscoll technology issue, but I would be more than
8 happy to convey that question to him and get an answer to you.

9 COMMISSIONER SKOP: All right. Thank you.

10 MS. COLEY: Uh-huh.

11 CHAIRMAN EDGAR: Commissioner Argenziano.

12 COMMISSIONER ARGENZIANO: Thank you. I had some of
13 the same questions as Commissioner Skop had, and you answered a
14 few of them. One, also, the safety factor and security.

15 MS. COLEY: Absolutely. The blades are actually
16 tethered, as I said, to the bottom of the ocean floor. We have
17 a couple of safety features that we are implementing within the
18 systems. One is a shut off switch that, you know, is
19 automatic. As soon as we see something, and when I say see
20 something, we are actually going to have cameras monitoring our
21 initial test site, so that we can see anything that is coming
22 along that we can actually shut it down.

23 COMMISSIONER ARGENZIANO: And in regards to the test
24 site now, you indicated it was rather small at this stage.

25 MS. COLEY: I can't give you the dimensions of it,

1 but it is a very small test area.

2 COMMISSIONER ARGENZIANO: I think I heard you on your
3 slide also say that you are basically 20 years away from
4 replacing fossil fuels.

5 MS. COLEY: I wouldn't say replacing them, I would
6 say augmenting them.

7 COMMISSIONER ARGENZIANO: One other question in
8 regards to the desal component of that. Would it be
9 incorporated into the underwater systems that you have
10 currently?

11 MS. COLEY: Yes. In fact, as I said, we are not
12 pursuing that because of funding. We are looking -- we have
13 one of our professors who is very well versed in this area, and
14 we are looking to use his technology when we get additional
15 funding. We are in the process of seeking that.

16 COMMISSIONER ARGENZIANO: I am very interested in the
17 technology for the future, obviously, but I think that -- and
18 it is only my opinion at this point, but it would be something
19 to incorporate at the beginning to reduce the costs later on if
20 it was possible to do the desal, and I would love to get more
21 information on that component of it.

22 MS. COLE: Sure. I could send you that.

23 COMMISSIONER ARGENZIANO: Thank you.

24 CHAIRMAN EDGAR: Thank you. Anything further? No.

25 Thank you so much.

1 MS. COLEY: I appreciate it.

2 CHAIRMAN EDGAR: Okay. And my understanding is that
3 we had maybe one person from the investor-ownedes who wanted to
4 speak at this time?

5 MR. HARTMAN: Good morning, Commissioners. My name
6 is Tom Hartman. I work for Florida Power and Light.

7 FPL appreciates the opportunity provided by this
8 Commission to consider a portfolio standard, which by the terms
9 of the Governor's executive order is directed to reduce
10 greenhouse gas emissions. FPL warmly supports the policy
11 direction stated by Governor Crist at the recent Florida
12 climate summit. FPL is committed to working with the Governor,
13 the Legislature, this Commission, our customers, and other
14 stakeholders in reducing greenhouse gas emissions.

15 FPL and its parent company, FPL Group, agree the time
16 has come for energy policy in the United States and in the
17 state of Florida to recognize climate change and to adopt
18 strong policies aimed at reducing greenhouse gas emissions,
19 especially CO2. This is why earlier this year FPL Group joined
20 the Environmental Defense and others as members of USCAP, which
21 advocates a CO2 cap and trade system in order to reduce carbon
22 emissions and put our nation as a whole on a path to lower
23 greenhouse gas emissions.

24 FPL Group recently issued a white paper, and our CEO,
25 Lou Hay, testified before Congress advocating a fee on all uses

1 of carbon emissions in the U.S. economy as the overall best way
2 to reduce CO2 emissions. Advocating and working to control
3 greenhouse gas emissions are central parts of our company's
4 daily business.

5 To go specifically to today's agenda, if one accepts
6 the primary purpose of the standard that we are seeking to
7 consider is greenhouse gas reductions, then we need to reframe
8 the task and break from our business as usual considerations of
9 mainly carbon-producing energy sources. FPL suggests that the
10 Commission's and the state's focus should be on encouraging
11 through new standards and measures the most clean and most
12 effective from the perspective of reducing carbon emissions.
13 Targets and measures for standards should be set that are
14 expressly focused on and measure their success by what Florida
15 is trying to control, greenhouse gases.

16 If the primary purpose of an RPS is to combat global
17 climate change through reductions in greenhouse gas emissions,
18 it is more properly termed a clean energy portfolio standard.
19 This focus has major implications for the design of this
20 program. A clean energy portfolio standard is a means of
21 achieving reductions in greenhouse gas emissions by a utility
22 while meeting the customers' needs for reliable, dependable
23 electric power at a reasonable and justifiable cost. A clean
24 energy portfolio standard should foremost value generation
25 sources and energy efficiency programs that have the greatest

1 goal -- have the greatest effect on the goal of reducing
2 greenhouse gas emissions. Clean energy sources, such as
3 nuclear energy, wind and solar energy, and carbon reductions
4 due to energy efficiency should therefore be recognized and
5 play prominent roles in order to help make it possible for
6 Florida to meet the ambitious climate change, carbon reductions
7 goals.

8 How does this thinking concretely translate into a
9 clean energy portfolio standard? We are prepared to discuss
10 our thoughts in more detail, but in a summary -- you know, as
11 we go on today. But as in this summary, let's consider the
12 fact that the numerator ought to be all of our generation
13 sources which can impact global gases. It should include
14 nuclear, it should include renewables, it should include solar,
15 wind, whatever is a clean source, divided by the denominator
16 which would be our net energy for load.

17 Florida's energy needs and greenhouse gas reduction
18 needs are so great that in FPL's opinion the Commission and the
19 state are not faced with an either or situation. We are faced
20 with a situation where all the approaches for reducing our
21 carbon intensity and best for reducing greenhouse gas emissions
22 should be adopted.

23 Florida needs all the best and most cost-effective
24 greenhouse gas reducing solutions that we can obtain. For
25 example, energy produced from landfill gas does produce carbon

1 emissions, it does produce CO2, but it reduces methane
2 emissions, which are a much more powerful greenhouse gas agent.
3 Wind and solar energy need to be paired with gas generation in
4 order to provide around the clock capacity and energy. But the
5 wind and solar also reduce CO2 emissions and that should be
6 included. Perhaps most significantly, our analyses show that
7 only by including large amounts of carbon-free electric
8 generation made possible by nuclear energy does Florida have a
9 realistic prospect of achieving the greenhouse gas emission
10 targets that we all want to achieve.

11 We look forward to working with the Commission and
12 all the stakeholders on achieving these important tasks.

13 CHAIRMAN EDGAR: Thank you, Mr. Hartman.

14 Commissioner Skop, did you have a comment?

15 COMMISSIONER SKOP: Thank you, Madam Chairman. In
16 the interest of adhering to the highest ethical standards, I
17 would also like to disclose for the record that Mr. Hartman was
18 my direct supervisor while I was employed with FPL Energy, an
19 unregulated subsidiary of the FPL Group. Thank you.

20 CHAIRMAN EDGAR: Thank you, Commissioner Skop.

21 Thank you, Mr. Hartman.

22 MR. HARTMAN: Thank you very much, Chairman.

23 CHAIRMAN EDGAR: And before we move to the next
24 section on our agenda, I would like to recognize Chris Kise who
25 is joining us today from the Governor's office. And, as I said

1 earlier, would be making a few comments at some point, and I
2 think this would be an excellent time.

3 Mr. Kise, thank you for joining us.

4 MR. KISE: Oh, I appreciate it. And I apologize,
5 Commissioners, Madam Chair, and Commissioners for being late.
6 I also think, and I don't want to take the responsibility for
7 this, because I notice that there are some other
8 investor-ownedes that look like they wanted to make comments, so
9 I don't want to take their fire for standing up here, but you
10 invited me, so thank you.

11 CHAIRMAN EDGAR: I did invite you, and we will make
12 sure that everybody has an opportunity to speak today.
13 However, what we had discussed on the agenda was that there
14 would be one representative of the IOUs at each section to be
15 determined, and Mr. Hartman appeared to be the person to do
16 that on that section. But we have other sections ahead, and we
17 will look forward to those further comments.

18 MR. KISE: And, indeed, thank you, and I will be
19 brief. I don't know if this is one of the investor-ownedes
20 microphones here, a tape recording, but I will put that over
21 there.

22 I apologize for being late, and I was late for a
23 reason that I will go into it a little bit later. The Governor
24 had an announcement this morning with Progress Energy and with
25 a company called Biomass Gas and Electric, which I think

1 demonstrates the opportunities inherent and why we're here
2 today.

3 But first, the Governor would certainly like to thank
4 all of you for conducting this workshop, for taking the lead
5 very quickly and demonstrating that this issue is important.
6 And with some of the decisions that have come out of the
7 Commission lately and with the tone at the Commission, it is
8 evident, at least to the Governor, and I think to everyone in
9 the state that you all are giving the environment a seat at the
10 table, and that is extraordinarily important as we go forward.

11 As a dear friend of mine and now retired general
12 counsel of TECO Energy, Sheila McDevitt, used to say, if you
13 are not at the table, you are on the menu. And so it is
14 important that environmental considerations be at the table and
15 be an equal partner. That is not to say that we elevate one
16 over the other, but certainly making that part of the
17 consideration is very important to the state. Obviously, very
18 important to the Governor, and so he thanks you for your
19 leadership in that regard in taking the time today to go
20 through these issues.

21 And if he were here today I know he would say what he
22 says to me frequently. There is sign on his desk, and it's
23 four words, it can be done. And anyone that's ever been in the
24 Governor's office, as Attorney General, when he was in the
25 State Senate, as education commissioner, has seen that sign,

1 and know that that is how he feels about many issues, and he
2 feels most passionately about this issue. It can be done.

3 And so far the tone today, and I think it will
4 continue from what I have seen, and the conversations that I
5 have had with some of the folks that are going to participate
6 today, are going to follow that lead and follow that theme,
7 that it can be done. We are not here to talk about what can't
8 be done or what some would call perhaps doable or workable. It
9 can be done. All of it can be done. And for those that say
10 that this isn't a benefit to our economy or it is not going to
11 help our environment we need only to look at the announcement
12 this morning from Progress Energy and Biomass Gas and Electric
13 of over \$150 million of new investment in Florida.
14 Collectively, directly and indirectly approximately 100 new
15 jobs, most of those in Liberty County, which that is a
16 substantial investment. It is a substantial investment in any
17 county in Florida. But certainly in a county like Liberty
18 county that represents an extraordinary opportunity
19 economically and environmentally. A way to put what
20 effectively is a waste product to use in creating renewable
21 energy.

22 There are opportunities available. It will be good
23 for the economy. It will be good for the environment. And
24 some of the presentations you have already seen this morning
25 demonstrate innovation. The presentation that the FAU

1 professor just gave on water energy, hydro power -- I am not a
2 scientist. I have no idea whether is workable or not, but the
3 idea that people are thinking in that direction; that they are
4 thinking towards innovation; that they are thinking that the
5 world is not flat; that you can actually build an airplane that
6 leaves the ground; that you can have a personal computer and
7 not a mainframe computer; that you can communicate over the
8 Internet; that you can have cell phones that are \$20 that you
9 can communicate with people all around the world. That sort of
10 innovative thinking, the Governor would submit to you all, is
11 what is going to drive this renewable energy into the future,
12 and it is going to make it beneficial for Florida, for the
13 environment, and for our economy.

14 So, thank you. I know I am just being a cheerleader,
15 but that is really the only role that we have here today, since
16 the scientists and the utilities and those that are substantive
17 participants in this process have substantive comments, and
18 they have been extraordinarily cooperative. For that, the
19 Governor also thanks them for their cooperation. But it can be
20 done, and I hope that you all keep that in mind today and as we
21 go through this process. It is going take a bold -- it is a
22 bold step. It is going to require bold leadership that you
23 have already demonstrated. And, frankly, it can be done.

24 So, thank you.

25 CHAIRMAN EDGAR: Thank you, Mr. Kise. We appreciate

1 you joining us.

2 Okay. We are going to move into the next section of
3 our agenda, which is labeled as C, but before we do that let's
4 just take about five minutes. I have asked our next speakers,
5 Mr. Moline, Mr. Ferraro, Mr. Keeley, and Mr. Barber to come
6 forward and be near. We will take a five-minute stretch, and
7 then we will be back and move along. Thank you.

8 (Brief recess.)

9 CHAIRMAN EDGAR: Okay. We are going to get started
10 again.

11 All right. Thank you all. If you would either take
12 a seat or take your conversations out in the hallway so we can
13 move on. Again, we appreciate all of your enthusiasm and that
14 you will all be hanging with us all day.

15 I do need to mention, as has been evident, we are
16 having some software/technical difficulties that we are working
17 through, and my thanks to our staff for working so hard to
18 continue to enable to us to function. However, it may be that
19 we might have to lose the audio feeding for those people that
20 are calling in. And if that is the case, I do want to point
21 out that this is all being recorded and will be available on
22 the website. And as I mentioned earlier, a transcript will
23 also be available.

24 And with that, we are going to move into our next
25 section which is setting a renewable portfolio standard, and we

1 have asked that our panelists talk to us about what types of
2 issues could go into that, types, functions, forms, et cetera.

3 And, Mr. Moline, thank you very much for joining us.

4 MR. MOLINE: Thank you, Madam Chairman and
5 Commissioners. I am Barry Moline with the Florida Municipal
6 Electric Association, and I work with the 34 city-owned
7 electric utilities across Florida. We serve about 15 percent
8 of customers. We have communities like Jacksonville, Orlando,
9 Gainesville, Tallahassee, Lakeland, and a lot of small
10 communities like Havana, Chattahoochee, Williston, and so on.
11 So we have a very wide range of profiles.

12 When the Legislature passed the legislation that
13 asked the PSC to develop an RPS, we took that very seriously,
14 and our members got together and tried to develop what we think
15 was a reasonable proposal. And what we are doing here is we
16 developed something and we wanted to put it on the table for
17 discussion. And to the extent that others may want to comment
18 today, fine, another time, that is fine, too. We welcome
19 comments and discussion on it.

20 But what we tried to do was to focus on things that
21 are doable, and we started by looking at RPSs nationwide. And
22 what we think is that this proposal takes those previous ones
23 to the next level; and that is that it begins to incorporate
24 climate changes using climate change goals. And I say begins
25 to incorporate that, but I also think that as an RPS it puts

1 Florida in a leadership position. And the most important thing
2 is that it thinks outside of the box.

3 The first outside the box thought is that we have
4 renamed it to green portfolio standard because -- as opposed to
5 an RPS, because we have expanded the definition to include
6 energy efficiency and energy conservation as well as renewable
7 energy.

8 I think that all state RPSs developed previously were
9 developed in an area with generally less attention paid to
10 climate change issues.

11 So we sat down and asked the first question, which
12 was what is the difference between a kilowatt hour generated
13 from solar energy, for example, and one saved from energy
14 efficiency and energy conservation? And there was sort of
15 silence in the room, and we figured there was no difference
16 between the two, and why not go after both. The philosophy
17 there is also if you are trying to achieve a goal, why not look
18 at every tool you have in the box. So, this is an effort at
19 looking at all the tools we have available to us.

20 We didn't have a goal as we were developing this.
21 The Governor has, as you know, set out the 20 percent goal as a
22 an RPS. But, frankly, we think that a 20 percent goal for
23 renewables only may be difficult to do. You know, at what cost
24 I suppose you might say. You know, it may be achievable --
25 rather, let's say it can be achievable, and everyone in the

1 room would probably say it is achievable, but the question is
2 at what cost? So, we think that adding efficiency and
3 conservation makes that goal much more achievable in a faster
4 time period.

5 Now, when you talk about an RPS mandate, the first
6 question that utilities ask is how much is all that going to
7 cost? So we developed a concept of an affordable rate cap, and
8 that is where -- you know, first of all, all of us, utilities,
9 regulators, legislators, consumers themselves, you know, have a
10 concern about the open-ended cost of an RPS or a green
11 portfolio standard. So we looked at other RPSs, and Lawrence
12 Berkeley Labs did a really good study of other state RPSs. And
13 I didn't include this one graph that they incorporated in their
14 study, but later on today Kim Owens from JEA is going to talk
15 about affordability and what it means to a utility. She is
16 going to show this graph, but I will describe it briefly in
17 that it is a study of 15 other RPSs, and it shows the rate
18 impact of those RPSs.

19 And, granted, there are only three out of the 20 --
20 you know, we have heard 21, 27. I counted 23 yesterday, 23
21 states that had RPSs. But the rate impact seemed to cluster
22 around one percent. Some states had a higher rate impact and
23 some states had lower ones. And the lower ones tended to
24 be the reason why was because they had less expensive wind
25 available nearby.

1 But the point is that there seemed be a cluster
2 around one percent. So we started arguing about what it would
3 cost, and then we said, well, you know what, let's stop
4 arguing, and let's just say one percent. Let's see how much
5 that gets us in Florida. And it turns out that one percent
6 gets you about \$200 million of investment in green energy.

7 So, once we got over that, we could start talking
8 about how to actually do it. And when we think that one
9 percent is a reasonable amount, you know, when utilities ask
10 their customers to invest in green energy, a lot of customers
11 say, yes, we will do it. But when they actually say how much
12 will they pay a month, very few actually spend more money. So
13 we focused on one percent and the \$200 million, at least
14 initially, that that buys us. And figured that, you know, in
15 January the Commission had a workshop on renewables, and it
16 seemed to me that the conclusion from the day was money. We
17 need money. Bankers were asking for long-term commitment.
18 Others in the room were saying, you know, we need a little bit
19 more money because some of these technologies cost more money,
20 and, one percent, \$200 million is a significant investment.

21 Well, why is affordability important? Clearly we are
22 the guardians of cost. Utilities take our costs very
23 seriously, as I know you do. We are careful about ever penny
24 that we add to customers' bills.

25 Orlando Utilities Commission, this is just one

1 example, 40 percent of their customers earn less than \$35,000.
2 I mean, of their households. And nearly half of them are
3 renters. So they may have a limited ability to invest
4 themselves. Their landlords have the ability, but they tend to
5 have less ability to make energy investments.

6 And, in fact, yesterday I received a letter from an
7 OUC customer that simply said I can't pay my electric bills.
8 Is there any way you can help forgive this. And OUC is
9 directing them to a community action agency.

10 But, you know, we want to think about the big
11 picture, but the reality is that implementation is harder and
12 controlling cost is harder. So we don't want to overburden
13 consumers from the start. And, again, that is why we focused
14 on the one percent.

15 So like every one or most of the other states, we
16 started out with a table. And this table has dates, you know,
17 in Column A, and in Column B it has what we started out by
18 putting some percentages in, you know, one to 20, or -- I don't
19 know, we put some numbers in, but we weren't sure why. And
20 then Column C starts out in year 2010 with 200 million, that's
21 millions. And it goes up three percent a year over 20 years to
22 351 million. That is just an escalator based on, you know,
23 what utility revenues might be, you know, over 20 years. And
24 the bottom line there is if you estimate three percent, that is
25 5.4 billion over 20 years. On the low end, if it is one

1 percent a year increase, that is about 4 billion. So we are
2 talking here about over 20 years a 4 to \$5.3 billion increase.

3 What we don't have in Column B is a trajectory of the
4 goals. I mean, if we start out with one percent and go up one
5 percent a year, you know, that may be possible. If you start
6 out at 10 percent, you know, it is just a little unclear. And
7 we think that you need to do a resource study of what is out
8 there today and what the potential is for renewables. Not so
9 much to get every single detail and to delay the process, but
10 to have an understanding of the technologies that are out there
11 and the costs that they are, so that we can determine an
12 implementation trajectory. And, you know, could we just issue
13 an RFP and get the same information? Possibly, but I don't
14 think that we would get as far out in the out years as we would
15 like to.

16 There is tremendous resources here in the state,
17 universities, FSEC. There are think tanks. I think that
18 someone ought to be tasked with pulling together a resource
19 study of all the varieties of renewables, efficiency and
20 conservation that is available. And if you say, well, you
21 know, we don't know; we are not sure, but here are the goals
22 anyway. I think that it sets us up, us utilities, because we
23 are the ones that have to implement it. It sets us up for
24 failure because we take goals very seriously. And we know that
25 we will be back in front of you talking about those goals. And

1 we would rather not have to disappoint you by setting goals
2 that are unattainable. So we would like to work with you to
3 set goals that are attainable. And, also, if we set goals that
4 are nondefensible, they are just, you know, they will just be
5 wrong.

6 So, again, other states list a variety of
7 technologies, and this is just a list from other states. The
8 last one says and any other resources that the PCS thinks are a
9 good idea. I didn't include kryptonite, Bob, but I can add
10 that easily to the list.

11 We don't have a preference, no preference whatsoever.
12 You know, frankly, we think that we ought to go with the ones
13 that are most cost-effective, but anything that is a good idea
14 and meets certain criteria, you know, environmental profile
15 would also be good, as well. Cost and carbon attributes are
16 probably or environmental attributes are extremely important,
17 as well.

18 And we think that the PSC -- and this is a result of
19 the resource study. It would be smart to add a greater weight
20 to technologies that yield, let's say, carbon-free kilowatt
21 hours. And we think that this is a way to address the
22 Governor's concern for our preference for solar and wind, give
23 them a higher priority to solar and wind. And what we mean by
24 that is for every megawatt hour you generate from solar or wind
25 or other clean technologies that meet, say, the carbon criteria

1 or a certain environmental criteria, give them a higher rating.
2 That megawatt hour is worth twice or three times. And there
3 needs to be a balance between possibly cost. If solar PV,
4 photovoltaics, costs more money, then it should have -- maybe
5 have a higher weighting.

6 We would lean against a set-aside for solar or a
7 particular technology, because that takes away the choice of
8 the technology that we would have to implement. It forces us
9 to implement something that may or may not be economic. And
10 the speaker a couple of speakers ago talked about the
11 difference between the portfolio standards that force a certain
12 set-aside for solar versus a weighting, and said that the
13 weightings weren't as effective. But I think that it is
14 incumbent on us to add in certain criteria so that we make sure
15 that the weightings are appropriate. So I wouldn't give up on
16 the weighting system.

17 We do include in our portfolio standard the behind
18 the meter efficiency. And that is -- I emphasized on this
19 graphic the bullets that say transmission distribution system
20 efficiency and power plant efficiency improvements. And I
21 should add in there power plant efficiency improvements that
22 are permanent and not just maintenance related.

23 What we are talking about -- we also ask the question
24 what is the difference between a kilowatt hour saved on the
25 utility side versus the customer side. And, again, silence in

1 the room. There is really no difference between that kilowatt
2 hour saved. And if the goal, again, is to try to reduce carbon
3 emissions, then there shouldn't be any difference. And, you
4 know, we also look at it another way, and it is written up here
5 is if we are just talking about a green portfolio standard then
6 we relegating this to a group of folks in a corner of the
7 building that are just going to go ahead and do their best, and
8 they will come up here once a year and tell you how they are
9 doing. But if we ask everyone in the entire utility, the T and
10 D folks, the generation folks, and the DSM and renewable folks
11 to put your thinking caps on and do everything you possibly can
12 to save kilowatt hours, or to generate clean kilowatt hours,
13 then you are going to have a lot more ideas in the room. And
14 looking at the bigger goal, we think that it will be more
15 achievable.

16 And I would actually suggest to you that the resource
17 study, including these ideas, might tell you it is more than
18 20 percent. I don't know. But I think we have to go through
19 that process, and the more things that we include looking at
20 the big goal of saving kilowatt hours or generating clean
21 kilowatt hours will give you the right number of a goal that we
22 should achieve.

23 Now, I did talk about the one percent cap,
24 affordability cap, and I wanted to show you how that works
25 together. And the idea is that in a particular year let's say

1 your goal is five percent of your budget -- I'm sorry. Your
2 goal is five percent of your green portfolio standard, but your
3 budget is one percent. Let's say that budget is \$10 million.
4 So, if you can achieve your goal, your five percent goal, by
5 spending \$5 million, then you can stop spending money. The
6 utility doesn't have to continue to spend the full \$10 million.
7 It can if it wants to, but it doesn't have to. But, you know,
8 in that case, it has been more efficient with its investments.

9 On the other hand, if the utility has the five
10 percent goal, but only achieves four percent and still spends
11 its \$10 million, it stops spending money. Again, it can
12 continue to spend if it wants to, but it stops spending money
13 there as when you are required to do so. And in both cases the
14 utility reports back to the Public Service Commission and says
15 what happened? Why did it achieve that goal more cheaply? Why
16 couldn't it achieve the goal? And that becomes an information
17 sharing for all of us utilities to say, what are good
18 investments, what are bad investments, maybe we need to make an
19 adjustment for next year? But the point is that we are not
20 going to get this right every year or right from the start, but
21 we need to have a continuing evaluation process where we try to
22 get it right over time, and that allows us to do that.

23 There is another example there from an efficiency
24 perspective, but in the interest of time, I think that that is
25 a good example of how -- well, actually, no. This is one more

1 point. When we talk about \$200 million, we are really only
2 talking about the above avoided cost funds. Okay? So if, for
3 example, PV has a cost implement cost of a hundred -- let's see
4 my example. I didn't give an example. I'm sorry. It is on
5 the next slide. Funding of avoided cost. Let's say PV costs
6 \$130 a megawatt hour. Is that amount -- give me a number.

7 UNIDENTIFIED SPEAKER: At least half.

8 MR. MOLINE: Half? All right. Well, for the sake of
9 my example, it works good for the example. It's half of that?

10 Okay. \$130 a megawatt hour. But a utility's avoided
11 cost is \$60 a megawatt hour. The difference there is \$70 a
12 megawatt hour, okay, 130 minus 60. That \$70 a megawatt hour is
13 the cost that would be applied to the utility's budget, not the
14 part that the utility would have spent. And so, for example,
15 if a utility invests in a technology, and let's say a
16 technology that is at avoided cost or below, that is not
17 counted in the utility's budget for green energy, okay? So the
18 point is that you are only paying for stuff that is more
19 expensive.

20 There are some other issues, and in the interest of
21 time, I will go through them quickly. I have given you a more
22 detailed summary or explanation of the whole proposal, but I
23 will just pass over a few.

24 We think that all green portfolio standard costs
25 should be part of pass-on to customers. The budget would be

1 based on revenues and not taxes. Credits can be traded with
2 others. You can bank excess green energy for the future.

3 We picked a start date for projects of January 1,
4 1997, because that is the Green E standard date that came into
5 force, and, you know, we are flexible on that. We wanted to
6 make sure that early adopters weren't penalized. There may be
7 some projects that began before 1997, but the point is, though,
8 we wanted to make sure that folks that had invested in green
9 energy, you know, before are still included. And we believe
10 that production and savings has to be evaluated or metered,
11 statistically evaluated or metered. And there are general
12 industry standards for statistical evaluation.

13 This next slide talks about small utilities. This is
14 utilities with sales of less than 500,000 megawatt hours. That
15 is the PURPA standard, the federal PURPA standard. This would
16 exclude small utilities like Havana, Bushnell, Wachulla from
17 participating, at least initially, where it would be encouraged
18 to participate voluntarily. Yes, they could write a check for
19 the amount, you know, for the amount that they would owe, the
20 budget. They could write that to the state or they could write
21 that to another utility. But that would take away their local
22 option of offering programs locally. And here is the
23 situation, is that small utilities and they are just -- they
24 are not just municipals, but they are electric cooperatives as
25 well, they lack staff. And, basically, you know, a city like

1 Havana has a utility director and then line workers. So what
2 we would want to do is show them over time how easy this is.
3 As programs become standardized elsewhere, they could implement
4 it at the small utilities. But the point is that at least
5 initially it is difficult for them to do.

6 We would have annual reporting to the PSC where we
7 discuss the technologies and measures and get our lessons
8 learned from each other. And then every three years -- and
9 this is a characteristic that is in no other state RPS. We
10 would call for a three-year program evaluation to make sure
11 that the budget and the goals are set properly, because we are
12 not going to know if we get it right unless we evaluate it in a
13 recommendation to the Legislature to make adjustments to the
14 program if necessary.

15 If you don't achieve your goals, then, over time
16 there would be a penalty, and I will describe that shortly, but
17 we would recommend averaging the goal achievement over five
18 years to allow for start up and years where there is
19 overgeneration or undergeneration.

20 There would be an alternative program where a utility
21 can invest all or part of its investment of green energy budget
22 with research and development, or demonstration programs, or
23 qualified universities in the state that do that kind of work.
24 FSEC is one. And we want to make sure we move the ball forward
25 from a technological perspective. So we think those

1 investments should be available, as well.

2 And then there should be a component for
3 noncompliance. You know, we suggested here that if you don't
4 comply at all, then you pay 10 percent more than your budget to
5 a state fund that would issue grants to consumers.

6 So, again, we seek input on our proposal from anyone.
7 It is actually up on our web site, Publicpower.com. We want to
8 do what we can or we recommend to you to let's learn what we
9 can from other states to make sure that our green portfolio
10 standard, you know, is the next step and implement things that
11 work as opposed to things that didn't work in other states. We
12 want to recommend that we use a lot of the RPS expertise from
13 national labs and just other states nationwide. We recommend
14 doing the resource study and seeking outside assistance from a
15 university, consultant, think tank or even, you know, the
16 Department of Energy might even have money that is available to
17 do that. And that concludes my remarks.

18 Thank you, Madam Chairman.

19 CHAIRMAN EDGAR: Thank you, Barry.

20 Commissioners, any questions for Mr. Moline?

21 Commissioner McMurrian.

22 COMMISSIONER McMURRIAN: I have one quick question.

23 Mr. Moline, thank you for your presentation. You mentioned the
24 resource study. How quickly do you think that could be done
25 reasonably by an independent organization, whoever that may be?

1 MR. MOLINE: Well, I don't think that it takes a long
2 time to do it, you know, with the maximum amount of effort that
3 is involved. You know, I would defer that question to somebody
4 like Bob Reedy.

5 I mean, Bob, if you will excuse me to defer that, how
6 long do you think it would take to put together a resource
7 study? We've done it in the past, a couple -- two months?

8 MR. REEDY: Six months at a minimum. At least
9 six months. Push it a little more.

10 CHAIRMAN EDGAR: Okay. And your answer for the court
11 reporter I think was approximately a minimum of six months.

12 MR. REEDY: A minimum of six months.

13 CHAIRMAN EDGAR: A minimum of six months.

14 Commissioner Skop.

15 COMMISSIONER SKOP: Thank you, Madam Chair.

16 Just one quick question, and help me refresh my
17 memory, but in conjunction with the storm hardening
18 workshop that we had, there was some presentation from, I
19 believe, maybe your organization about weather flow data in
20 conjunction with an initiative with NOAA wind field maps. Is
21 that correct?

22 MR. MOLINE: That is right.

23 COMMISSIONER SKOP: Okay. In that regard and knowing
24 that the wind field maps and the things that are being done,
25 install additional met towers throughout the state in many

1 different locations at different tower heights, what efforts
2 are you making to make collateral use of this met tower data to
3 further advance the initiatives identified within the
4 Governor's executive order to the extent that this data can be
5 very useful for the siting of wind turbines throughout the
6 state consistent with the Governor's executive order?

7 MR. MOLINE: Well, what we need to do is -- I think
8 that the Commission needs to ask that question of the storm
9 hardening folks, of the storm hardening group, and say there
10 may be some information in there -- I mean, there is
11 information in there that we would like to look at for the
12 availability of wind, and what is the level of data that we can
13 pull out of the data gathering to use for this analysis. So I
14 think we just need to make the formal request to do it, and
15 we'll -- and the wind, the actual granular wind data isn't
16 available to us utilities. It's proprietary by our partner in
17 the project, but there is probably a level of data that we can
18 get that would help us in the evaluation.

19 COMMISSIONER SKOP: Thank you. And this is a follow
20 up. In the best interests of the state it might be a good idea
21 to try to work through some of those issues. Once again, there
22 is a collateral benefit that is already there for the taking
23 without additional cost. So if you could facilitate those in
24 the interests of the state, I would greatly appreciate it.

25 MR. MOLINE: I will follow up with them.

1 COMMISSIONER SKOP: Thank you.

2 CHAIRMAN EDGAR: Commissioner Carter.

3 COMMISSIONER CARTER: Thank you, Madam Chairman.

4 Very good presentation. Let me just ask you this. I was fine
5 until I heard it was going to take like six months to a year
6 for a study. What can be done now? I mean, we have had
7 studies out the ying-yang. That is a technical term. And we
8 have had various and sundry discussions, but what can be done
9 now?

10 I mean, given where we are now, and given what is in
11 front of us now, we know what we have got, maybe a 100-year
12 history of the weather in Florida, we see our population trends
13 trending upward, we see our demand for greater power, we see
14 these opportunities out here for new technologies, and all like
15 that, but what can be done now? I mean, studying is good, but
16 what can be done as well as studying? Do you know what I'm
17 saying to you?

18 MR. MOLINE: Yeah. Well, the alternative is to
19 guess. And I don't mean that as though that is a bad thing,
20 even though I said I thought it was a bad thing. If you start
21 out in that table, you know, from one to 20, you know,
22 one percent a year going up, if you say every year we are going
23 to evaluate and make sure that we are getting data back, and
24 just seeing how we do, you know, then in a couple of years you
25 will know. In the meantime, you know, there is going to be

1 value in studying. And after three years you might say, oh,
2 geez, you know, we ought to be at five percent, or 10 percent,
3 or, you know, we might be on track at one, two, three percent.

4 So I think that there really is no alternative than
5 just to guess, because you could ask for everybody in the room
6 to just submit your information. But, you know, is that a good
7 analytical study? So it is either study it a little bit, wait
8 a little bit of time -- I recognize that the Legislature -- or
9 that the Governor has asked you to make a recommendation to the
10 Legislature. You know the Legislature goes until May, so if we
11 start today, then you do have that time to fill in the numbers
12 in the table. So if you commit to do that, then I think we
13 have time to fill in the table.

14 COMMISSIONER CARTER: A follow up, Madam Chair.

15 The reason I asked you that is because from your
16 perspective you started out saying, well, in this vast universe
17 we break it down to one percent. So there is some study there.
18 So in this vast universe of one percent, that's like \$200
19 million. And if we spend this \$200 million over this 20-year
20 plan, you're either at 4 billion or 5 billion, depending on
21 what percentage you come out to. But if you are doing that and
22 you have got known variables and you have got known
23 perspectives based upon where you are leading from, at the end
24 of a year or two years when the study is completed, you can
25 juxtapose that against the actual process and it make the study

1 moot or make it better. Wouldn't you agree with that?

2 MR. MOLINE: I would.

3 COMMISSIONER CARTER: So the basis of my question
4 was, is that it seems to me there are data available that will
5 allow us to start down the road, and we can juxtapose our
6 actual results against the data from the study. And the study
7 is probably going to be based upon -- you said guess. The
8 study is pretty much going to be a guess, too, based upon
9 information that is out there. So, I was just thinking, again,
10 you know, using your example or your model here, you know, what
11 can be done?

12 MR. MOLINE: Well, what you are saying is do the
13 study -- fill in the table with some goals, do the study,
14 nevertheless, and see how that matches out over time and make
15 your adjustments, you know, in the next year or two or three.
16 That's sort of what I heard you say, right?

17 COMMISSIONER CARTER: Right.

18 MR. MOLINE: And I think that is reasonable. But,
19 remember that utilities take goals very seriously, and if you
20 tell us the goal in 2010, as I heard this morning was 10
21 percent, then we might be a little uncomfortable, because I
22 don't think we could achieve 10 percent by 2010.

23 COMMISSIONER CARTER: This is just a comment. At
24 least by starting you are creating an environment in the
25 marketplace where people will start to invest. New industries

1 will come on line. New technologies will be put in place.
2 They will come off the drawing board and into practicality. So
3 I'm just saying that why bifurcate a process like that by
4 applying -- just taking the one percent, but applying that and
5 also doing the study. At least that is going to send a signal
6 to the marketplace, hey, there are opportunities out there.
7 And when people see opportunities in the marketplace, they are
8 going to come up with a better mousetrap.

9 MR. MOLINE: Right.

10 COMMISSIONER CARTER: And so that is just a comment.

11 MR. MOLINE: Well, recognizing the time frame, I
12 think that it is a reasonable approach to begin to fill in the
13 table, but simultaneously do a study and try to gather data
14 that makes sense.

15 CHAIRMAN EDGAR: Commissioner Argenziano.

16 COMMISSIONER ARGENZIANO: I agree. I think that six
17 months at a minimum is too long. And coming from the
18 legislative process, when you start the word study, it usually
19 means stall or take your time. And I think Commissioner Carter
20 is correct. Let's get moving. You have some numbers to base
21 things on, and then take it from there. But let's get moving,
22 because I think the economic incentive then is really there for
23 other companies. So I tend to agree with that.

24 MR. MOLINE: Well, you know, Commissioner Argenziano,
25 I would agree with you. And I would say that if you agree that

1 an affordability rate cap is important, then you start down the
2 road and the goal is the goal. We are going to learn by trying
3 to achieve that goal. And we are also going to make sure that
4 we don't charge consumers too much. And we are going to learn
5 a lot over time by balancing the affordability rate cap, at
6 least in this proposal, and achieving the goal. So we will
7 have data very quickly, you know, every year.

8 CHAIRMAN EDGAR: Commissioner Argenziano.

9 COMMISSIONER ARGENZIANO: But I also believe that
10 there is data out there that we could pull from now from other
11 places that would help us tremendously to get things rolling.

12 And I see a hand going up there.

13 MR. FENTON: My boss is Bob Reedy.

14 CHAIRMAN EDGAR: And I know your boss quite well.
15 Nice to see you again, Doctor Fenton.

16 MR. REEDY: He promised me some more resources.

17 CHAIRMAN EDGAR: Okay. We do run dialogue, but I
18 have to say the court reporter cannot pick up for the
19 transcript comments from the audience. And so I will need you
20 to step to the microphone. Wait, Whoa, whoa. But we are
21 running way behind time, and, Doctor Fenton, I like to stay on
22 time, and we're behind. So we do have a question from
23 Commissioner Skop, and then we are going to move on to our next
24 speaker.

25 Thank you.

1 Commissioner Skop.

2 COMMISSIONER SKOP: Thank you, Madam Chair, and I
3 recognize we are pressed for time, and I will make this very
4 brief.

5 But when attending the summit in Miami, I distinctly
6 remember hearing the phrase call to action. And echoing
7 Commissioner Carter's concern and Commissioner Argenziano, the
8 Governor set a very, very ambitious goal, and it's my intent as
9 a Commissioner to execute. And my advice would be let's stop
10 making excuses and start putting some stuff in the ground. So,
11 again, studies upon studies upon studies, we have got some
12 data. We need to execute. We need to make things happen, but
13 we also need to be cognizant of doing it in a cost-effective
14 manner to the consumers.

15 So I agree with you on that sole point, but absent
16 spending \$200 million for some study that could go on forever
17 and ever and ever, only to come up with additional excuses,
18 conservatively speaking, if I had \$200 million today, I can
19 install 90 megawatts of wind in the state of Florida. So to me
20 it's probably an improper use of the money and a better use
21 would be installing physical generating assets which bring
22 renewables to the state Florida. Thank you.

23 MR. MOLINE: Madam Chairman, can I just conclude?

24 CHAIRMAN EDGAR: Yes, briefly.

25 MR. MOLINE: Thank you. And, Commissioner Skop, I

1 didn't suggest in any way, shape, or form spending \$200 million
2 on the study. We want to get going. This is a serious
3 proposal. It has got -- you know, we recognize that we want to
4 establish goals. We don't know what those are. But we also
5 are suggesting spending real money. \$200 million is a lot of
6 money for all utilities to spend across Florida. So thank you
7 very much.

8 CHAIRMAN EDGAR: Thank you. Thank you, Barry. Thank
9 you, Commissioners, for your questions. And we are going to
10 move right on to the next speaker, which is Mr. Frank Ferraro,
11 with Wheelabrator Technologies.

12 Mr. Ferraro, welcome.

13 MR. FERRARO: Thank you and good afternoon.

14 Thank you for inviting me to the workshop, and I
15 would like to share a little bit with you about my company,
16 about the technology that we represent, but also share my
17 experiences. I have worked with state legislatures and public
18 service commissions and other agencies in other states working
19 on RPSs and some of the challenges and what they have come up
20 with.

21 Well, let me move right along here. A little pitch
22 about Wheelabrator Technologies. We are a wholly owned
23 subsidiary of Waste Management, Inc. We operate 21 energy
24 facilities across the United States, 19 of those are classified
25 as renewable energy, 16 waste-to-energy plants and five

1 independent power plants.

2 Oops, I think I shut it off. Here it is. In Saugus,
3 Massachusetts in 1975, Wheelabrator developed and built the
4 first commercially successful waste-to-energy plant in the
5 United States, and we continue to operate that today. We have
6 upgraded the environmental controls and process controls, but
7 it operates very well today, and we are very proud of that.
8 And Wheelabrator operates facilities with a total capacity of
9 over 800 megawatts.

10 This is just a graphical representation of the
11 facilities and the dates that they were brought on line, so I
12 won't spend any time on that.

13 But what about Florida? In Florida, Wheelabrator
14 owns and operates the two waste-to-energy facilities in Broward
15 County. We have a combined generating capacity of
16 134 megawatts. They process 4,500 tons a day of municipal
17 solid waste. For the City of Tampa we built and we operate
18 their facility in downtown Tampa, 22-megawatt generating
19 capacity, processing 1,000 tons of municipal solid waste. And
20 then in Auburndale we have a facility that processes waste
21 wood, tires and landfill gas, and we have a generating capacity
22 there of 50 megawatts, so that is a little unique facility over
23 there.

24 What is waste-to-energy? Well, waste-to-energy is a
25 process for safe disposal of municipal solid waste and the

1 generation of clean renewable energy. The facilities are
2 equipped with state of the art pollution control equipment, and
3 they are operated by professionals that are certified by the
4 United States Environmental Protection Agency and the American
5 Society of Mechanical Engineers. There is federal and state
6 requirements that those operators be certified.

7 In the United States there are 89 waste-to-energy
8 facilities in 27 states. They combust municipal solid waste to
9 reduce its volume. They produce energy. Usually it's
10 electricity, although they can be co-generators with steam and
11 electricity. And they recover ferrous metals and also
12 sometimes non-ferrous metals. They are sent to recycling.

13 I might add here that I made my presentation talking
14 just about renewable energy, but since the topic of climate
15 change and greenhouse gases has come up, I will mention that
16 because of these three attributes of waste-to-energy,
17 waste-to-energy is actually better than carbon neutral. We
18 actually provide a net reduction or avoidance of greenhouse
19 gases. There are studies that have been done that show for
20 about every ton of municipal solid waste processed at a
21 waste-to-energy plant, it is about one ton of carbon dioxide
22 equivalents that are avoided. So I think, you know, you
23 shouldn't just think that if a facility burns something that it
24 is obviously contributing to greenhouse gas emissions. In
25 fact, we provide net reductions of greenhouse gas emissions

1 every time we operate the facility.

2 Moving along. Again, for the U.S., about 13 percent
3 of the solid waste in this country is processed by
4 waste-to-energy. It is about 29 million tons a year, and it is
5 about the waste produced by about 36 million people. Just a
6 little side fact, nationally every person produces about
7 four and a half pounds of trash a day. Unfortunately, I think
8 in Florida it is a much higher figure. Again, nationally, that
9 waste-to-energy represents about 2,500 megawatts of capacity.
10 It also represents about 18 percent of the national renewable
11 energy capacity when you exclude hydro power.

12 In Florida, there are 11 waste-to-energy facilities.
13 They represent about 500 megawatts of installed capacity, and
14 they process over 17,000 tons per day of municipal solid waste.
15 These are currently existing plants.

16 I was also asked by the staff, you know, what did I
17 know about any future plans for waste-to-energy in the state.
18 Well, Lee County is completing an expansion of their facility.
19 Hillsborough County has signed a contract with another vendor
20 to do an expansion of theirs. Palm Beach County is considering
21 an expansion of their facility. It's a very significant
22 expansion. And there are others that are considering
23 expansions. These facilities are very expensive. Those four
24 facilities that I mentioned that Wheelabrator owns and
25 operates, if we were to build those today the investment would

1 be about a billion dollars. So you can see that they are very
2 expensive facilities and, consequently, it takes a lot of money
3 to run them.

4 Well, the questions in the draft agenda that the
5 staff had sent out for the setting, the renewable portfolio
6 standard were essentially three questions. How should it be
7 set, what vintage of units should qualify, and what is a
8 reasonable level of goal? And the how should it be set had
9 three different subcategories. I would like to jump first to
10 what technologies should qualify, because you have to decide
11 what qualifies before you can set a goal.

12 And there I think it is pretty simple. The
13 Legislature spent actually a couple of sessions working on what
14 was renewable energy, and in 366.91 they developed the
15 definition of renewable energy, and we endorse this.
16 Wheelabrator believes that the Legislature took a long time to
17 come up with this, and I think it is a good definition.

18 Now, how should it be based on a megawatt goal or a
19 percentage of peak sales? I say sort of answer B. The
20 requirement should be set on a percentage of total annual
21 electric sales. And there is a two-fold reason for that.
22 First, a fixed megawatt hour requirement doesn't provide for an
23 associated growth of renewable energy along with load growth.
24 So you have to be able -- if there is load growth, you have to
25 also grow the amount of renewable energy that you want to have

1 in the state. And, secondly, a percentage requirement also
2 provides incentives for utilities to implement demand-side
3 activities. For every ten megawatt hours of demand-side, if
4 you have a 20 percent goal, they don't have to get two megawatt
5 hours of renewable energy, because they have reduced the amount
6 of electric sales. Which is a good thing, because what we are
7 trying to do here, I think, is also reduce our dependence on
8 fossil fuels and conventional power. So if we reduce it by
9 demand-side a percent goal is an incentive to do that.

10 The second was what vintage of renewable unit should
11 qualify towards the goal. And there hasn't been a lot of
12 discussion of this today. And my answer is, number one, new
13 units. Obviously, RPS must provide an incentive for new
14 renewable energy generation, but also existing facilities.
15 There is a certain amounts of existing renewable energy
16 capacity in the state now.

17 If the RPS doesn't include that, you run the risk
18 that those facilities are no longer competitive and will have
19 to shut down. And that has happened around the country. And
20 so we have talked a lot about incentivizing new technologies
21 and new units, and we should definitely do that, but we have to
22 protect the base; otherwise, you will never get 20 percent, or
23 whatever the goal is.

24 And I would like to offer some additional thoughts on
25 new renewable energy. The definition should be of capacity

1 that is established after the effective date of the rule. And
2 to get a little complicated, it should establish an age for
3 transition of a new facility into the existing category. After
4 a certain period of years, a facility that might be categorized
5 as new today, after ten years or so, they don't need the same
6 incentives that a facility ten years from now that is starting
7 up would need. So the facility that is new today, in a certain
8 period of time, say ten years, should be reclassified at that
9 time as an existing unit so that they are not competing with
10 brand new technologies and new units down the road. They are
11 operating. They have been operating for a number of years.
12 They won't need the same incentives. So it is a little bit of
13 complicated concept, but I think that it is something that will
14 help down the road.

15 And what should be new is obviously new greenfield
16 facilities, but also increased capacity at existing facilities,
17 whether it is the addition of new generating capacity or if it
18 is efficiency improvements that lead to increased generation.
19 And, of course, for new we want to set ambitious goals.

20 And there were discussions here about how do you --
21 you know, if you don't reach that. Well, other states have
22 adopted what they call alternative compliance payment, and that
23 is if the utility is unable to obtain the renewable energy,
24 they can meet their requirement by paying into a fund. And the
25 question then is what is the level of an alternative compliance

1 penalty? And that is the \$64 question, because it should be
2 high enough to incentivize utilities to search out and provide
3 incentives for new renewable energy.

4 My experience with other alternative compliance
5 penalties. For example, in Massachusetts, Massachusetts on the
6 slide here you see their renewable portfolio standard, which
7 goes up to 2009 with a 4 percent requirement. They also have
8 an alternative compliance penalty that in 2007 -- it increases
9 every year according to the cost of living. In 2007, the
10 number has been set at \$57 a megawatt hour, a pretty high
11 number. Well, every year since 2003, the utilities have paid
12 the alternative compliance penalty because they can't get
13 enough renewable energy. So what that tells me is that the
14 alternative compliance penalty isn't high enough to entice new
15 renewables into the area.

16 And Massachusetts has the luxury that they can buy
17 renewable energy credits or power from New Hampshire, Vermont,
18 and Connecticut. So they have a big market that they can draw
19 from to meet their RPS, and yet they are unable to meet the RPS
20 for new renewables, and they have been unable to meet it since
21 the standard took effect in 2003. And I do know that they are
22 buying new renewable energy from New Hampshire and from
23 Vermont. So, you have to have that in mind that that
24 alternative compliance penalty has to be set at a high enough
25 number or else you are never going to meet That. And what's

1 going to happen is what are you going to do with the funds that
2 you put into this ACP? You know, is it going to go for studies
3 or are you going to use it to develop new technologies or such?
4 So you need to think about that, too.

5 And, again, we must protect the existing base of
6 renewables, and my recommendation is that once the definition
7 of renewable is determined, then the staff should inventory
8 existing renewables, determine what the existing capacity is
9 and set that as the standard for the existing renewable RPS, so
10 that we protect the existing base. And then, as I said, a
11 little bit of complication. Down the road the existing RPS
12 would increase as what are today new units transition into old
13 units.

14 Then, finally, what is a reasonable level for the
15 goal, and I guess that is another \$64 question. Today
16 renewables in Florida represent anywhere from one percent to
17 2-1/2 percent, depending upon what numbers you see and hear.
18 You know the goal, the Governor has thrown out a goal of
19 20 percent. I think that is a very good goal to look at. Over
20 what time period and how aggressive do you want to get?

21 You have seen this slide before. I think it is a
22 very good slide. I will point to a couple of items here. For
23 example, you have to be careful with goals and what they are
24 and what they mean. Just as a side point, up in New Hampshire
25 where my office is located, we believe in being very precise.

1 We have a 23.8 percent goal. It will be interesting to see
2 that. But you also have things like the state of Maine. They
3 have a goal of 30 percent by the year 2000. What you don't
4 know, just looking at that, is that they defined renewable so
5 broadly they had 40 percent renewables the day the law was
6 passed. So it was a meaningless goal, although they do have a
7 10 percent new renewables, I think, by 2017 up there.

8 You have states like New York with 24 percent, but
9 they included a certain amount in that 24 percent, but they are
10 not in the RPS. It is a complicated situation. So you have to
11 look deeply inside those. The state of Pennsylvania is another
12 one. They don't call them renewables; they call them
13 alternative energy. And they include other technologies, such
14 as waste coal, which for Pennsylvania is an important thing
15 because they have so much waste coal just laying over the land,
16 and there are a dozen plants that are taking that and
17 processing it into electricity. So they have included that in
18 their goal, so it is a broader standard.

19 So, I think this is a very good chart. It shows you
20 what other states are doing, but you have to look much deeper
21 than what it just shows on the surface here. Again, some
22 examples in other states. New Jersey, they had a -- started in
23 2004, had a 3-1/4 percent. Their goal is 22-1/2 percent by
24 2021. Connecticut, started basically a year ago with 5
25 percent, and then just this past legislative session they

1 increased their goal for 2020 from 23 percent to 27 percent,
2 but they also included things like combined heat and power,
3 conservation load management, and recovery of waste heat.

4 So, those are just some thoughts and experiences I've
5 had, some recommendations and suggestions. And throughout the
6 process I will be happy to assist and provide input where we
7 can.

8 CHAIRMAN EDGAR: Mr. Ferraro, thank you, and I thank
9 you also for speaking to the questions that (inaudible) had
10 laid out.

11 Commissioner Argenziano, do you have a question?

12 COMMISSIONER ARGENZIANO: Yes, I do. Out of
13 curiosity, on your waste-to-energy plants, what is the
14 actual -- with the pollution controls, what is your actual CO2
15 levels, emissions?

16 MR. FERRARO: Well, we have emissions -- that's why
17 it's a little more complicated than just looking at what comes
18 out of the stack. About 70 percent of what goes into the waste
19 that goes into a waste-to-energy plant is biogenic or biomass
20 and that is considered carbon neutral. So only about
21 30 percent of the actual emissions are man-made carbon dioxide
22 emissions. But then we offset electricity produced by
23 conventional power plants because we produce electricity, and
24 we recover metals and send that to recycling, which has a
25 beneficial effect on greenhouse gases.

1 There is also some -- and it varies from facility to
2 facility there. There can be some benefit from sending it to a
3 waste-to-energy plant versus sending it to a landfill, if the
4 landfill doesn't control their methane gas from the
5 decomposition well. So there is another benefit there. So
6 it's about -- nationwide, if you took an average, it is about
7 one ton of trash gives one ton of carbon dioxide equivalent
8 reductions. Since across the nation we process about
9 32 million tons, it's about 33 million tons of carbon dioxide
10 equivalence reduction from waste-to-energy.

11 COMMISSIONER ARGENZIANO: Thank you.

12 MR. FERRARO: I don't know if that answers it.

13 COMMISSIONER ARGENZIANO: It helps. Thank you.

14 CHAIRMAN EDGAR: Commissioners? No other questions
15 at this time. Thank you.

16 Oh, did you have a question? I'm sorry.

17 Commissioner Carter.

18 COMMISSIONER CARTER: Thank you. You mentioned the
19 number of plants that you had both here in Florida and across
20 the country, and I think you said that the cost for the plants
21 in Florida is about a billion dollars. Over the time that you
22 have been operating, has the cost of building these plants and
23 the technologies involved, are they going down or is it going
24 up?

25 MR. FERRARO: It has gone up primarily because these

1 are big -- they are power plants, and they have a lot of steel
2 in them. And as we all know today, a lot of commodity prices
3 have gone up principally because of the economic situation in
4 Japan and in China -- excuse me, in China and India, that the
5 cost of steel has gone sky high, and so these facilities are
6 much more expensive per megawatt of capacity than they were in
7 the past.

8 COMMISSIONER CARTER: Thank you, Madam Chair. Thank
9 you.

10 CHAIRMAN EDGAR: Thank you.

11 MR. FERRARO: And that four billion is for the four
12 plants that we have built in the state, including the one for
13 Tampa. The one billion, I'm sorry.

14 CHAIRMAN EDGAR: Thank you.

15 We are going to vary the order a little bit in the
16 interest of scheduling and flow and nourishment. So, I am
17 going to ask now for us to hear from Mr. Vinnie Dolan, Vice
18 President, External Relations, Progress Energy. And after Mr.
19 Dolan, and this is no pressure on you, but after Mr. Dolan,
20 then we are going to go ahead and take our lunch break. And we
21 will resume with the next speakers after the lunch. And I
22 appreciate their working with us, as well.

23 And so, Mr. Dolan.

24 MR. DOLAN: Thank you, Madam Chair and Commissioners.

25 I'm here to speak on behalf of Progress Energy about

1 renewables. And I would be remiss if I didn't thank Mr. Kise
2 for his kind remarks this morning. That was a kinder, gentler
3 Mr. Kise than what I negotiated the last rate settlement with,
4 so we appreciate it. And we were proud to stand with the
5 Governor and Biomass Gas and Electric this morning on the new
6 project, that together with our E-grass project will be 200
7 megawatts of renewable for our system, and we are pleased about
8 that. And really the best part of that is we are doing it
9 within the current confines of the rules here in the state of
10 Florida, under the cost-effective avoided cost tariffs.

11 And I think that is important to recognize as well,
12 because as we move out and explore some of the newer
13 technologies under a renewable standard, I think it would be
14 important that we don't let the policy get too far ahead of the
15 cost-effective development of some of these other technologies.
16 You know, we are on the lookout for new technology. We just
17 recently released a request for renewables. We are interested
18 to see the responses. But as some of the prior speakers have
19 said, at the end of the day it is the consumers that are going,
20 you know, pay the price for electricity, and we all need to be
21 mindful of that. And we certainly are at Progress Energy, and
22 we will continue to be on the lookout for that aspect of it.

23 I will mention we are in touch with some of the other
24 technologies. We are working, as I think you all know, with
25 hydrogen fueling stations, as well as hydrogen technology fuel

1 cells. We are active in the solar arena as well. Another new
2 development on solar, we believe that solar thermal really is
3 the most cost-effective right now. And we have developed --
4 John Masiello in our energy efficiency group has developed sort
5 of an innovative program under the energy efficiency umbrella
6 that this Commission approved, where we are installing solar
7 thermal on residential applications, where we have credits that
8 come from the utility tied in with our energy management
9 program together with state credits and federal credits that
10 make that a very cost-effective application for residential
11 homeowners, so we will continue to work on that.

12 Secondly, we have heard a number of different things
13 this morning about objectives. And I think as we start to
14 chart this cost -- this course, we really need to think about,
15 you know, what is the objective that we are trying to achieve
16 here. And there are a number of sort of competing objectives.
17 We have heard about greenhouse gas emissions. Not all
18 renewables are necessarily tied in with greenhouse gas
19 emissions. You know, there is the cost issue. There is
20 energy -- there is a reliability issue. You know, there are
21 some technologies that are -- you take, for example, some of
22 the waste heat applications from industrials or some of the
23 waste-to-energy plants, they tend to run in sync with the
24 reliable nature of our system here in Florida.

25 Those folks understand the need of high load factor

1 delivery. Some of the other technologies have a little bit
2 more intermittent application on our system. And I think we
3 need to recognize that as well as we consider these. You know,
4 price stability, energy security, all the things that we have
5 talked about. So ultimately we need to decide what are our top
6 objectives, and how do we balance across those objectives when
7 we look at renewable energy.

8 As far as cost-effectiveness, one of the other areas
9 that I have been experiencing lately is there has been be a lot
10 of activity and discussion of this at the federal level. And
11 we have as a state, both policymakers on the legislative side
12 and this Commission have stood against a federal mandate and
13 for a good reason. There have been proposals at the federal
14 level, and there will be another proposal in the House next
15 week in Washington that we think is really not the best way to
16 solve this problem. We think long-term it will definitely
17 increase costs for consumers.

18 We think the policy is best developed at the state's
19 level. It is a state's right issue. We know best what our
20 resources here are in the state. We know the application and
21 we will, you know, balance that against the interests of the
22 consumer. So, clearly, we, as Progress Energy, have fought
23 against those federal mandates, and we will continue to do so.
24 But we will certainly support a thorough conversation at the
25 state level to see what makes sense for Florida.

1 And as an example, some of the federal mandates have
2 not included a broad definition of how we look at renewable.
3 And I will tell you, you know, as far as the study issue that
4 came up, we have done prior studies in the state. The
5 Commission has done prior studies. I'm not sure that it would
6 take us a lot to look at those prior studies, update those and
7 see what the conclusions are. And I think they suggest
8 perhaps, you know, a five percent or so available resources in
9 the state of Florida. So 20 percent is clearly a stretched
10 goal. And I think as we move out, we ought to have, you know,
11 we ought to be sensitive to the time frames. If we are going
12 to chart that goal out into the future, we need to make sure we
13 don't have unintended economic consequences for the consumer in
14 the short-term. And I think we need to be mindful of that as
15 we go.

16 So I think one area that has gotten more play of
17 late, and Mr. Moline mentioned this in his remarks, is energy
18 efficiency. And this is something that the state of Florida
19 knows how to do. And some of the clean energy portfolio
20 standards that have looked at the broad definition have
21 included energy efficiency, and we certainly support that. It
22 is something we can do today. It is something utilities -- all
23 the utilities in the state have upped their goals with energy
24 efficiency of late. Perhaps there is more room there that we
25 can look at more aggressive goals in energy efficiency. I know

1 that is part of what the Governor spoke about at the energy
2 summit. Certainly Progress Energy supports that notion. And
3 the best part about that is the benefit stays at home. There
4 is a direct benefit to the consumer that takes advantage of the
5 program. And we do it in a way with our cost-effectiveness
6 test that suggests that we do not have negative consequences on
7 consumers as a whole. So I would clearly urge the Commission
8 to consider strongly how energy efficiency fits into the
9 renewable portfolio standard.

10 Nuclear, that's somewhat controversial, and you will
11 hear differences of opinions about how that fits into a
12 renewable portfolio. I will say this, if we talk about
13 renewables in the context of greenhouse gas emissions then we
14 ought to talk about nuclear in that context. And, certainly,
15 it is no secret that Progress Energy is interested in new
16 nuclear. We know we have to build new capacity in the state of
17 Florida. We are looking at new units in Levy County, and we
18 are hoping to keep that process moving along.

19 And I mentioned reliability. I think -- and Mr.
20 Zambo touched on this earlier. We have had discussions with
21 some customers. If we are going to move away from the
22 traditional way we look at cost and cost-effectiveness, you
23 know, there are some industrial applications that have
24 secondary benefits with some of our large consumers, whether it
25 be waste heat, or job retention, economic development, business

1 retention here in the state of Florida. And these industrial
2 customers are important to our tax base, so we would encourage,
3 you know, looking carefully at that as we look at our avoided
4 cost tariff.

5 And, lastly, I have talked about the consumer, you
6 know, and, certainly, Chairman Edgar and Commissioners, you are
7 very mindful of the consumer, and I think as we continue this
8 debate, it would be good for us to hear from the consumer
9 folks. Public Counsel, FIPUG, the Retail Federation, the folks
10 that are typically here before you that perhaps are not here
11 today. But I think as we move forward in this debate --
12 because as I said, you know, we, as a utility -- you know, as
13 an individual consumer, I will pay these costs, but as a
14 utility these are typically costs that will ultimately be borne
15 by the consumer. And I think with energy prices and the
16 trajectory that we have been on as a state in the last few
17 years, prices are up, people are conscious of that, and we
18 should be mindful of any increase in our customer's electric
19 bill. And, certainly, we take that very seriously.

20 So, just some quick comments. I think as far as the
21 specifics of the proposal, there is a lot of ways to do that.
22 Typically we see kilowatt hour based in the other states, and
23 we think that makes sense, but I would certainly encourage us
24 to look at a broad definition given our resources on the
25 ground. Here in Florida if we want to keep the benefits in

1 Florida, we talked about the economic development of new plants
2 and that sort of thing, we need to be mindful of how we define
3 that. Otherwise, we run the risk of sending money outside the
4 state of Florida, and I don't think that is a good policy for
5 us to be considering.

6 So with that I will conclude, and I will be happy to
7 answer any questions.

8 CHAIRMAN EDGAR: Thank you, Mr. Dolan. We're finding
9 out that we did extend the invitation to the Office of Public
10 Counsel and to different consumer and business organizations to
11 participate and make some comments today, and some of them took
12 us up on that offer and some declined that opportunity for
13 today. But we will continue to reach out and hope to hear from
14 all interested parties as we continue to look at all of these
15 issues, because our processes are best when we have full and
16 diverse participation.

17 Are there any questions for Mr. Dolan?

18 Commissioner Skop.

19 COMMISSIONER SKOP: Thank you, Madam Chair, and I
20 will make this very brief in the interest of time. But I
21 noticed that Mr. Dolan didn't specifically mention wind in any
22 of the renewables for alternative energy sources. And can you
23 comment on whether Progress is actively looking at wind. And
24 with respect to your related comments about affordability,
25 which is also very important to me, because, again, I am a

1 realist, but what state or federal grant opportunities are you
2 currently looking at to subsidize the end cost to the consumer,
3 if you are looking at wind?

4 MR. DOLAN: Commissioner Skop, that is not an area of
5 the business that Progress Energy is directly involved in, so I
6 would defer that question. I know FPL is active in that area.
7 That is not an area of business development that we are
8 exploring.

9 COMMISSIONER SKOP: Madam Chair.

10 As a follow-up, if I read the executive orders
11 correctly, the RPS 20 percent with emphasis on wind and solar,
12 so I would also ask you guys to be little bit more openminded
13 and consider that. Thank you.

14 CHAIRMAN EDGAR: Commissioner Carter.

15 COMMISSIONER CARTER: Thank you, Madam Chair. I
16 really was pleased to hear your comments. One about the
17 meeting with the Governor this morning over in Liberty County.
18 I mean, if there is anyplace in Florida that needs economic
19 development, that is it. But also to see your company still
20 working. The line of questioning I asked Mr. Moline was can we
21 do something while we are planning, and it seems appropriate to
22 me. And I noticed you said that we could probably do 5
23 percent, but if we run on that track to do what we can now
24 under the current iteration, do all we that can, there may be a
25 great possibility for us to dust off some of those old studies

1 that we paid for and put in the bookshelf someplace or
2 sometimes use them for door stops. So I am pleased to hear
3 that.

4 The other thing is that I was pleased to hear that
5 your company -- just a week or so ago I was reading about
6 working directly with neighborhoods and developments. And one
7 development where you guys gave like \$100,000 for a condominium
8 complex that utilized efficient operation in the construction
9 and all like that. And I think that has been the recurring
10 theme here by talking about adding efficiency to the dynamics
11 of the process here. So I think that there is some benefits in
12 terms of looking at efficiency as well as providing an
13 opportunity for new uses of renewables and generating and
14 opportunity for new business to come.

15 You know, we don't know what is around the corner,
16 but we do know if we don't put anything out there, any
17 opportunities, there won't be anything around the corner. If
18 you keep doing what you've always done; you will always get
19 what you have always gotten. So that line of questioning to me
20 it seems to make sense that we start to proceed. I think
21 Mr. Moline's example showed that in 20 years, one variable at
22 the one percent you're at four billion or 5.3 billion, but it
23 is like a 20 year process. And in that process, that is just
24 going toward the one percent. You may have -- to use his
25 verbiage, if you get that one percent in the first year, you

1 know, you can calibrate differently.

2 And so you said earlier in your comments that you
3 could possibly do 5 percent. But who knows, with that kind of
4 investment, maybe six years down the road, instead of 5 percent
5 maybe you are at 15 percent. Would you be interested in that
6 perspective?

7 MR. DOLAN: Commissioner Carter, I agree. I
8 understand your concept. I think the precaution is that we
9 know where we are headed. And one of the concepts that
10 Mr. Moline also touched on that we would support is making sure
11 we have a safety valve. If we move out and the supply-side
12 doesn't materialize as we might expect, that we make sure that
13 we don't, you know, let costs get to a point where it has a
14 severe impact on consumers. And typically you see that in some
15 of the other states.

16 One of the other speakers mentioned about
17 Massachusetts. I mean that is sort of a safety valve price
18 that they have hit. You know, one way to cure that is to raise
19 the price. Well, somebody is paying for that. The other way
20 to cure that is to get the technology developed. Somehow we
21 have got to get the two sort of converging.

22 And we really need to judge what the time horizon is
23 for that. I know there is a lot of different ideas about where
24 we are on price points for different technologies. But, you
25 know, perhaps we will get some of those answers. We have a

1 request out for proposals. We are anxious to see, you know,
2 what the specific price proposals will come in at and how that
3 fits with our current rules. Thank you.

4 CHAIRMAN EDGAR: Mr. Dolan, one more question.

5 COMMISSIONER CARTER: Thank you. Just as a
6 follow-up. As I said, I mentioned about the development last
7 week where you guys gave \$100,000. Are you finding other
8 developers to take you up on that initiative?

9 MR. DOLAN: You know, I don't know the specific
10 answer to that. Perhaps we can answer that in one of the other
11 segments, Commissioner. But what I will tell you is we just
12 recently launched, as you know, a very aggressive new marketing
13 campaign called Save the Watts to promote energy efficiency
14 here in Florida. And I would expect, we are approaching the
15 high bill season here, that consumers will pay more attention
16 and, you know, it is really -- we put it out there, but it is
17 up to the consumer, you know, as far what they want to do and
18 what they want to participate in. So we are anxious to sort of
19 continue that promotion. I think we will see more increased
20 use of our programs here in Florida, not just with our company,
21 but of all the utilities in Florida, as well as the municipals
22 and co-ops. They are doing similar work. So it is good work,
23 and I think we need to continue that emphasis.

24 CHAIRMAN EDGAR: And we do have a few more questions.
25 Commissioner Argenziano.

1 COMMISSIONER ARGENZIANO: That just brought to mind
2 something, and it may seem small in the grand scheme of things.
3 But in your programs -- what I have noticed is that many, many
4 people do not use energy efficient light bulbs. They still
5 don't, and I don't understand that. I have understood that
6 they just -- when it comes to the cheaper incandescent, they
7 will go with those because they can't afford to pay maybe the
8 higher price for the more efficient bulbs, which would save
9 them in the long run, but they don't have the money at the
10 time.

11 Is there anything in your program that not only gets
12 the word out to everybody these really can save you, and how
13 much they can save you, or anything in the program that would
14 help those who maybe are lower income who cannot afford those
15 types of efficiency bulbs?

16 MR. DOLAN: Well, I may get Mr. Masiello to clarify
17 this later, but a big basis of what we are doing with Save the
18 Watts is education and drawing people to our website where they
19 can get that kind of information, Commissioner Argenziano. As
20 far as a direct subsidy for that type application -- we do have
21 some, John?

22 CHAIRMAN EDGAR: Come on up, John, quickly.

23 COMMISSIONER ARGENZIANO: It doesn't even have to be
24 a direct subsidy, maybe a cost or help with those who do not
25 have them.

1 MR. MASIELLO: I'm sorry. Actually, we just launched
2 a program up in Perry for a neighborhood energy saver program,
3 where we actually went door to door and installed conservation
4 measures. We installed compact fluorescent lights in five of
5 the most used incandescents -- I'm sorry -- incandescent lights
6 in the home. And that program was very effective. For those
7 500 homes that we did, we had about an 80-some-odd percent
8 penetration. So they canvassed the streets and went door to
9 door and actually did the installations. It was compact
10 fluorescent lights, it was weather stripping, pipe wrap, low
11 flow showerheads, and a variety of those measures that can
12 really help lower an energy bill. And they also educated the
13 customer on how to weigh these things, you know, replacing an
14 air filter and left them with air filters for that purpose.

15 In addition to that, in order to encourage our
16 customers to have energy audits, we now provide them also with
17 a weatherization kit. So any customer that calls up and
18 requests an energy audit, they get a weatherization kit. And
19 in that kit there is two compact fluorescent bulbs along with
20 weather stripping and some other things. So we get them
21 started, and the idea is to get them started, motivate them and
22 have them continue.

23 COMMISSIONER ARGENZIANO: Thank you.

24 CHAIRMAN EDGAR: And if you would, your name and
25 title for the court reporter for the transcript.

1 MR. MASIELLO: I'm sorry?

2 CHAIRMAN EDGAR: Into the microphone, could you tell
3 us your name and title?

4 MR. MASIELLO: Oh, I'm sorry. It's John Masiello.

5 CHAIRMAN EDGAR: With Progress Energy. Thank you.

6 MR. MASIELLO: Thank you.

7 CHAIRMAN EDGAR: And, Mr. Dolan, I think we have one
8 more question.

9 Commissioner Skop.

10 COMMISSIONER SKOP: Thank you, Madam Chair. Again,
11 to Mr. Dolan. Again, I apologize for being remiss and not
12 previously congratulating your company for the biomass plant
13 announcement this morning.

14 But also along the efficiency and demand-side
15 management initiatives that you just mentioned, and
16 Commissioner Argenziano and Commissioner Carter echoing their
17 concerns, has there been any consideration given to moving
18 towards a time-of-use metering or time-of-day metering to
19 smooth the peak demand curves to further bolster demand-side
20 management type opportunities?

21 MR. DOLAN: The answer is yes. I mean, we do have
22 time-of-use rates today for mostly commercial and industrial
23 application. There is work that is going on with our utility
24 and with other utilities where we are looking at more real time
25 application. I do think we still have a little gap on the

1 economics during the education aspect of that. And my personal
2 opinion is that adapting behavior in a home with real time
3 pricing at the residential level, yes, we have got some work to
4 do there as far as consumer behavior. But I think that that
5 technology is being applied. I know Gulf has been active in
6 that, Tampa Electric has been active in that of late. So I
7 think we will see more of that work, Commissioner Skop. And we
8 at Progress Energy are certainly interested to work in that
9 arena, as well.

10 COMMISSIONER SKOP: Thank you very much.

11 CHAIRMAN EDGAR: Commissioners, any further -- no.

12 Mr. Dolan, thank you so much.

13 MR. DOLAN: Thank you.

14 CHAIRMAN EDGAR: We are going to take a lunch break.
15 My suggestion is that we come back at 1:45. Commissioners,
16 does that work? Okay. And when we do, we will continue with
17 our next speakers.

18 (Lunch recess.)

19 CHAIRMAN EDGAR: Okay. We are going to get started
20 again. So, once again, I will ask everybody to either take
21 their seats or take their conversations out into the hallway.
22 I hope everyone was able to get some food.

23 We're going to finish with Section C on our agenda,
24 and to our remaining two speakers on this, I appreciate you
25 working with us so that we could all get some food hopefully.

1 And so I'm going to ask Mr. Scott Keeley from Siemens Energy to
2 please come forward.

3 Mr. Keeley, again, thank you for staying with us and
4 we look forward to your comments.

5 MR. KEELEY: Well, I wanted to give you a little bit
6 of a perspective of a developer. And we represent a very large
7 company that wants to invest millions of dollars in the state
8 of Florida into alternative energy, and what will a renewable
9 portfolio standard do for us.

10 Quite frankly from a developer's perspective, we're
11 in it to make a return on our investment. And if we have some
12 additional incentives that provide some additional funds, they,
13 quite frankly, can do a lot to help stimulate, you know,
14 additional investment, which gives us a cushion, because a lot
15 of these technologies are -- you know, they are emerging, they
16 are newer technologies, they are less tried. And, it has
17 worked in previous states. I mean, in the state of New Jersey,
18 you get \$8 a megawatt hour more for renewable energy. In parts
19 of Texas you get \$12 a megawatt hour more, and that will work.

20 Current available sources, and these are things that
21 are out there in the marketplace being done in a fairly big way
22 today. Landfill gas, biomass, all sorts of biomass from forest
23 waste to waste wood. Numerous things. Wind, very prolifically
24 done across the country. Solar, probably a little bit more
25 expensive, but, yet again, being done. And then just general

1 trash. There was a very accurate presentation about municipal
2 solid waste, and that's a very viable renewable alternative.

3 Specifically, Siemens is looking at landfill
4 gas-to-electricity in the state of Florida. And, in fact, we
5 have been selected, signed a contract, and should begin
6 construction shortly of a six megawatt project in Manatee
7 County that will convert landfill gas to electricity. What we
8 are doing there is the trash decomposes, produces methane,
9 which then is burned in three riciprocating engines.

10 Also, just a little bit more background information,
11 landfills are required to collect this gas, methane, which is a
12 precursor or it's a 20 times multiplier compared to CO2 for its
13 greenhouse gas impact. But the reality is that landfills that
14 operate these collection system, they are not selling the gas
15 for a useful alternative. They don't do the best job of
16 collecting it. And studies would indicate it is between 40 to
17 50 percent of the gas is collected when it's not being actively
18 sold. And when it is, you see a 92 percent collection
19 efficiency. So they do a much better job of collecting the gas
20 when they can receive money.

21 Another benefit. The county is actually going to
22 receive royalty payments. Manatee County will receive royalty
23 payments for that gas. Another just general fact, they tend to
24 be very high capacity factor applications. They run about
25 92 percent of the time. In the state of Florida, we have done

1 a very comprehensive search. We have talked to well over a
2 dozen landfills, and we know that there is between 80 to 150
3 megawatts of real projects that can be done.

4 The number has a pretty big range, because some of
5 the smaller landfills, the economics are just not as attractive
6 because of economies of scale. So it really depends upon how
7 small of a landfill you can contact. Another thing is the
8 total cost of these projects is relatively low when compared to
9 other forms of alternative energy. Between 60 and \$80 a
10 megawatt hour is the all-in cost, and that includes the royalty
11 payments to the landfills themselves. And as I stated, we are
12 developing a project in Manatee County.

13 The bottom left corner is an actual picture of a very
14 similar plant to Manatee that we will build. The three small
15 buildings on the right side of the picture are individual
16 buildings where the reciprocating engines are housed, and the
17 very middle lower part is where the flare is. In the upper
18 right-hand corner is just a picture of what an actual landfill
19 gas well is. The left side is a vertical wall that will extend
20 100 feet into the trash, the bottom portion is perforated. The
21 gas is sucked up and then it is taken back into the ground
22 which connects to a header next to the right side of the
23 picture, which gets collected to a main central pooling point.
24 But that's what landfill gas is.

25 Another, I will call it, very financially attractive

1 relative to other sources is biomass. And this is green waste,
2 things that can be picked up from residents at their homes,
3 palm fronds, grass clippings, that kind of a thing, tree
4 trimmings from utilities, agricultural waste and wood waste
5 from forestry management.

6 The fuel supply for these projects is really what
7 dictates the size. You don't want to transport the fuel overly
8 far. Typically you are using steam cycles. We would either
9 use direct combustion or gasification systems. Gasification is
10 a little bit more complicated, but it has a better emission
11 profile. And we believe, and we have studied this in the state
12 of Florida, there's between 25 and 150 megawatts of, I will
13 call it economically attractive waste that can be collected and
14 turned into electricity. So that's another very viable proven
15 technology.

16 This is a picture of our gasification system in
17 Dalton, Georgia. It is a gasification system that operates on
18 carpet waste and sawdust from Shaw Industries, and this is a
19 first-of-a-kind plant in the world, and an example of what we
20 would develop in the future. And, once again, it has been
21 tested on both wood waste and carpet waste.

22 Municipal solid waste to energy. Once again, we
23 believe that this is a very viable and, I will call it, a
24 relatively low cost form of renewable energy. And that, quite
25 frankly, depends upon your definition of what you think

1 renewable energy is. We think that it is an attractive one for
2 the future. A big question is whether the new technology is
3 going to be for converting municipal solid waste to
4 electricity. St. Lucia, Florida, they are doing a project with
5 plasma arc. Is it an emerging technology. It is less proven.
6 It has been done. It has not been done to that scale, but it
7 is very, very clean. So those are some of the things that will
8 differentiate the cost.

9 And there is a relatively large potential for
10 municipal solid waste in the state of Florida. It's well
11 greater than 500 megawatts, actually, if you want to take all
12 the trash, but that is a very large potential. There are
13 several other technologies that Siemens is not as active in
14 development, but will develop. Closed loop biomass, solar, and
15 wind. And when I say develop, Siemens has a group that is part
16 of actually developing these assets from scratch.

17 Siemens also manufactures power generation equipment
18 and wind turbines. And we think very highly of wind, but we
19 not actually at this time develop wind projects from greenfield
20 sites. The uncertainty around these technologies is a little
21 bit greater, so the costs unknown are a little bit greater. We
22 do know that there are certain parts of the country, I don't
23 know the exact situation in Florida, where wind is very
24 attractive. They just have the appropriate wind loadings, the
25 siting issues, it is all very appropriate, so it is very

1 affordable, below \$70 a megawatt hour. We just have not
2 studied wind in the state of Florida to know what the right
3 answer is.

4 Solar is also potentially cost-effective, although we
5 think more expensive than other forms of renewable energy.
6 But, there are complications in Florida. These do have to be
7 designed to withstand hurricanes. From our perspective, the
8 total price of electricity is one of our biggest issues into
9 whether we develop projects, and how rapidly we invest in
10 specific areas, and this total price would include the value of
11 renewable energy certificates.

12 Terms of electric contracts are very, very important.
13 Some of the standard offer contracts that were proposed were
14 lengths of ten years. That is a very short period of time to
15 get a return on a multi-million dollar investment. Air permits
16 are issues. An example would be landfill gas projects in the
17 state of Florida. Greater than six megawatts typically require
18 new source performance standards permits. They take a little
19 bit longer to get through the system. And then, there is
20 always the "not in my backyard" syndrome. That is one of the
21 big things that slows us down from wanting to jump into the
22 general waste to energy, municipal trash to energy business is
23 because it is very difficult to get a project sited, permitted,
24 and going.

25 And the last issue that we face is the cost of

1 electrical interconnection, particularly for our landfill gas
2 applications that are in the order of magnitude of four to
3 eight megawatts. It's more difficult for the cost of the
4 project to bear the cost of electrical interconnections. There
5 needs to be standardization and a method to keep the costs down
6 as low as possible. And one possible solution there would be
7 to allow the utility to recover that portion of the investment
8 in the rate base.

9 If you've got some questions, but I will also leave
10 you with some thoughts. I mean, you guys are here today to
11 talk about an RPS. And one of the specific things you have got
12 to do is set a target. And the question for you is is
13 20 percent the mandate of the total electricity in the state of
14 Florida or is it 20 percent of the new electricity. Those are
15 things that you have got to determine. And is a percentage the
16 right goal. I would suggest that just a calculated amount of
17 megawatts would be -- you know, a way to track it would be a
18 more straightforward way to go about it.

19 And then other things are what is my total goal. If
20 you set the goal of 200 megawatts, there's more than that under
21 development. You are not going to promote new sources. If you
22 set the goal at 2,000 megawatts, that may be, quite frankly,
23 too large and would cost the ratepayers too much. We would
24 suggest that, as I say, that we are aware of 300 megawatts that
25 can be developed, and I would call that the low hanging fruit.

1 That's the simplest most straightforward.

2 But those are all things that you have to decide.

3 And I guess the last parting thought is if you did establish a
4 target of 1,000 megawatts, and it did cost \$10 a megawatt hour,
5 you know, you guys can do the calculations. I think that costs
6 the ratepayers an average of less than 50 cents a month. So it
7 is not -- it won't be catastrophic to your average resident.

8 With that, any questions?

9 CHAIRMAN EDGAR: I'm sure there will be.

10 Commissioner Argenziano.

11 COMMISSIONER ARGENZIANO: When you say the plant is
12 very clean, what is very clean? What are the emission levels?

13 MR. KEELEY: I don't know specifically about plasma.
14 We are not doing that project. It is a gasification system
15 where the emissions are lower than your traditional
16 waste-to-energy plants. And I don't know percentage-wise on
17 NOX and other pollutants exactly what lower is, but they do
18 have preferential emission profiles.

19 COMMISSIONER ARGENZIANO: I understand they are
20 reduced, but I think I would like to know to what level.

21 MR. KEELEY: We are not doing that project, and I do
22 not know specifically what those are.

23 COMMISSIONER ARGENZIANO: Thank you.

24 MR. KEELEY: But there is a cost to that.

25 CHAIRMAN EDGAR: Commissioners, other questions?

1 No. No questions. Thank you.

2 MR. KEELEY: Thanks.

3 CHAIRMAN EDGAR: And the next speaker is Mr. Paul
4 Barber.

5 MR. BARBER: Hello. Excuse me, I didn't mean to come
6 all this way and break your microphone. I'm Paul Barber. I'm
7 with Energy Strategies located in Salt Lake City, Utah, and I'm
8 here representing Florida Crystals today. If I could just ask
9 an indulgence of the Commission. Mr. Gus Cepero is here with
10 me from Florida Crystals, and he is scheduled to testify in the
11 last group. And, unfortunately, he is going to have to catch a
12 plane. So if I cut my remarks short, can Gus come up and
13 follow me, because the remarks kind of dovetail with each
14 other.

15 Would that be okay?

16 CHAIRMAN EDGAR: Yes, absolutely.

17 MR. BARBER: Thank you very much.

18 Energy Strategies is an energy consulting firm in
19 Salt Lake City, Utah, which represents large industrial
20 customers not only in Utah and in the mountain west, but around
21 the country. Our typical customer uses between one and two
22 million dollars a month, either in natural gas or electricity.
23 In addition to that, as part of working for Energy Strategies,
24 I was the director of state government affairs for CitiCorp for
25 ten years, which is a large western utility which either served

1 customers or had assets in ten of the western states. So my
2 state government affairs operations included all of the western
3 states except for New Mexico. And my first introduction to
4 renewable portfolio standards and greenhouse gas reductions
5 occurred about 15 years ago in the Pacific northwest, so I have
6 been at this for a long time.

7 I have been in a lot of hearings such as this around
8 the country, and I just have to say that Governor Crist, what
9 he has done has moved Florida from the back of the pack to the
10 front of the line in one bold move, and I think you are all
11 to be commended for having the courage to take that action and
12 to proceed on that agenda, because this is a very vital issue
13 which is extremely important not only to Florida, but to the
14 rest of the United States.

15 As you can see on the map, there are four areas of
16 the country that have really led in the adoption of standards,
17 the west, Texas -- and in the west we do not consider Texas
18 part of the west, if there are any Texans here -- upper Midwest
19 and the northeast. And soon to be added is the fifth area,
20 which is Florida and the area surrounding Florida. But there
21 are almost as many different ways of -- there's about 25 states
22 plus the District of Columbia that have looked at RPS standards
23 and have adopted it in some way or another. There are almost
24 as many ways of doing this as there are participants in it.
25 This is an issue which has bubbled up from the states. It has

1 been driven by the people. It is not something that has come
2 to us from Washington, D.C., and the reason that it has come
3 that way is because it is a very important issue, and the
4 people by and large get it.

5 I can show you any number of political polls from one
6 end of the country to the other showing you that people are
7 very concerned about this issue and they are ready for the
8 government leaders to take action on it. The question was
9 asked should it be a megawatt versus a percentage of real
10 demand versus in-service rated generation. This is kind of a
11 way of framing the old debate about whether the standard should
12 be an energy-based standard or a capacity-based standard. And
13 certainly by going with an energy-based standard that favors
14 what I call intermittent technologies, such as wind and solar.
15 The capacity based standards are the more traditional base
16 technologies that you're going to need.

17 I'm going to be skipping ahead here. I don't know if
18 these slides are going to make a lot of sense, but I'm trying
19 to also dramatically abbreviate my presentation.

20 But the standards, what Florida really needs for you
21 to embark on this path as you have embarked on it is you are
22 different from almost any other state. You need renewable
23 energy to diversify your fuel base. That is very important.
24 California, right now, their goal is 20 percent by 2015. They
25 based it on 11 percent, so we only have to make up 9 percent to

1 get to their 20 percent goal. But they also have the ability
2 to bring in -- right now they are importing about 28 percent of
3 the energy they use from surrounding states. Florida doesn't
4 have that capability. And part of the debate that has occurred
5 previous to this time in Florida is the need for fuel diversity
6 to get away from the dependence on natural gas which is
7 building and will continue to build. The development of
8 renewable energy, if it is to be produced similar to what would
9 come out of a base load unit, could be a very important factor
10 in helping Florida also meet that critical need that the state
11 faces.

12 The question is what technologies or what things
13 should be looked at and be incorporated into law for the
14 approved technologies. Different states have approved
15 different technologies, and some of the technologies -- I have
16 in my presentation, I say that a state really ought to base
17 their technologies based on what works in that state. And that
18 seems very elemental and very basic, but, you know, you have
19 states in the upper midwest that have approved technologies,
20 for example, wave energy and solar. And you can hope and dream
21 that you'll have projects in your state that will generate
22 electricity, you know, if you are in the upper midwest from
23 wave energy, but in reality it's never going to happen. And
24 solar application up in the midwest probably doesn't make a lot
25 of sense either. So you see in a lot of these state laws

1 around the country they have overreached in the amount of
2 technologies they have approved on the basis that we want
3 everything, we want to develop everything.

4 Some of these technologies, quite frankly, and I
5 won't name one specifically, but in my opinion, they would have
6 a better chance of having electricity beamed down from the
7 Starship Enterprise in orbit around the Earth than some of
8 these technologies ever reaching a place where they contribute
9 significantly to the United States. Having said that, there
10 are technologies that are very important, that are
11 cost-effective today, and you need to identify those and move
12 forward with those technologies immediately.

13 In my estimation, those technologies for Florida
14 would be biomass, some types of solar application, and ocean
15 energy. Ocean energy is probably the least developed at this
16 point, but there are technologies out there that are very, very
17 promising and could have a major positive impact on Florida.

18 Biomass. When people think of biomass they think of
19 energy almost exclusively produced from cellulosic
20 technologies, and that's where people pigeonhole biomass. But
21 in reality, biomass has many more uses than just waiting for
22 that technology to mature and develop. Biomass is used more
23 extensively in Europe to co-fire or directly fire boilers which
24 then generate electricity. And some estimates, some national
25 estimates have indicated that the potential, if you develop

1 that potential in the United States, it could be equivalent to
2 the wind energy that has already been developed. And more
3 important to the country, that new hydro resources that could
4 be developed. So this is really the unsung renewable energy
5 resource that the country hasn't focused on. And, quite
6 frankly, the center for that biomass energy production is going
7 to be in the southeastern United States.

8 I used to spend half of my life in Portland, Oregon,
9 and the timber industry moved out of Portland 30 years ago, and
10 they did that for a very specific reason. And that is that the
11 growing season in Oregon was 185 days long for timber. In the
12 southeast it's 365 days. They couldn't overcome that fact of
13 nature any longer, and they have all relocated now to the
14 southeast. Is the timber industry still important in the
15 northwest? Yes. Is it anywhere as important as it was
16 50 years ago? No. People bowed to the reality of nature and
17 moved that industry to the southeast.

18 I think you have the same type of potential for
19 biomass generation in Florida. Not only biomass, but all types
20 of bioenergy. So that is a technology that I would highly
21 recommend you consider.

22 Another question is is clean versus renewable, and
23 I'll just touch on this question briefly and then turn the rest
24 of my time over to Mr. Cepero. Clean energy is very important.
25 And when the debate on renewable energy started, it started

1 because we wanted to diversify the energy sources for the
2 United States. We wanted to get off foreign oil. We wanted to
3 do positive things for the environment.

4 It is mutating into and being driven into a means of
5 significantly reducing greenhouse gases, and that is where it
6 is going to end up, and that is very important. So is clean
7 energy important? Yes, it is. And that's going to be the next
8 round of the national debate is a means of more effectively
9 limiting greenhouse gas emissions. But you can't lose sight of
10 the fact that clean energy is not renewable energy. So when
11 you set up your laws and your policies in Florida, you have to
12 carve out a portion for renewable energy.

13 Nature did not bless Florida with any oil or any gas
14 that I'm aware of. You know, somebody mentioned geothermal
15 power for Florida. We had a client that was a major geothermal
16 developer and their motto was geothermal is everywhere if you
17 just dig deep enough. And I guess that is true for Florida,
18 but Florida is never going to have any significant geothermal
19 resources. But what you have is you have this wonderful
20 growing climate, which is the best in the United States, and
21 you ought to target your renewable energy around that fact, and
22 you ought to set up your programs so that those type of
23 technologies have an incentive to develop, because right now
24 they are in the very beginning stages.

25 Clean energy will develop in and of itself, and there

1 is a role for it to play, and nobody should discount that, and
2 it is going to be important in Florida's future. But the task
3 before you today is how do you start developing renewable
4 energy, so I'll just ask you to keep that in mind as you
5 develop your policies. With that, I will conclude my
6 presentation, if you have any questions.

7 CHAIRMAN EDGAR: Commissioner Argenziano.

8 COMMISSIONER ARGENZIANO: Thank you.

9 First, I have to remark that you remind you a lot of
10 Vice-President Dick Cheney, and you probably don't have a lot
11 of hunting buddies. I couldn't help that. (Laughter.)

12 MR. BARBER: Well, that was a funny story.

13 Vice President Cheney was in Salt Lake last year at
14 this time and they had a big fundraiser in one of the downtown
15 hotels, and I had to go down and meet the Chairman of the
16 Republican Party right after it was over. And so his Secret
17 Service detail had put him on his limousine and sent it out to
18 the airport and half of it wasn't there when I walked in, and
19 they jumped me and said we thought we just got rid of you.
20 (Laughter.)

21 The other thing I would like to say is that Dick
22 Cheney is the point person for the global war on terrorism and
23 he has Secret Service protection and I don't.

24 COMMISSIONER ARGENZIANO: I understand.

25 But my question is your company was Energy

1 Strategies, the company that was involved with Australia and
2 the UK?

3 MR. BARBER: No.

4 COMMISSIONER ARGENZIANO: It wasn't?

5 MR. BARBER: No.

6 COMMISSIONER ARGENZIANO: Okay. Because I was going
7 to ask you, the work that they have done over there, there is a
8 lot of information I would think from the Australia and UK.

9 MR. BARBER: We have done work -- we represent, in
10 renewable energy we represent anywhere from small companies
11 that are trying to develop patents on renewable energy
12 technologies all the way up to multi-national, multi-billion
13 dollar energy companies that are interested in developing
14 renewable energy not only here, but around the world. We have
15 done work in Southeast Asia and are starting to do some work in
16 Africa, but we haven't done much work -- we have done some work
17 in Australia, but not that specific type of work.

18 COMMISSIONER ARGENZIANO: Thank you.

19 CHAIRMAN EDGAR: Commissioners, any further
20 questions?

21 Commissioner Carter.

22 COMMISSIONER CARTER: Not a question, just a comment.
23 You know, it is possible to beam down energy from the Starship
24 Enterprise. Scottie took the warp drives off line.

25 MR. BARBER: This is a technology that people talk

1 about. But if you generate it in space you would beam it down
2 via microwave to microwave receptors here on Earth. And, quite
3 frankly, that will happen before some of these renewable energy
4 technologies get up and start making a real contribution. And
5 I will not try and create any more enemies than I have by
6 naming those which I think fit into that category, but there
7 are technologies that work and there are those that are just so
8 far off in the future, you know, we should be studying them,
9 but we shouldn't be wasting our time thinking about developing
10 them.

11 COMMISSIONER CARTER: Live long and prosper.

12 MR. BARBER: Thank you.

13 CHAIRMAN EDGAR: And, Mr. Cepero was going to come up
14 and to follow behind rather than speaking on the next panel.

15 MR. CEPERO: Thank you. I appreciate it. I
16 appreciate it very much. My name is Gus Cepero, I'm with
17 Florida Crystals. We are a sugar company based in Palm Beach
18 County. We grow, process, refine, and distribute sugar in
19 Florida and really a good part of the U.S.

20 In addition to being in the sugar business, we are
21 also, we like to believe, in the energy business. We are the
22 owners and the operators of the largest biomass fired plant in
23 the country and some people believe in the world. And it's
24 located right adjacent to our sugarmill facilities in western
25 Palm Beach County. The electricity that we sell into the grid

1 is enough to serve something like 50,000 or 55 000 customers on
2 a year-round basis. We have been operating for ten years. We
3 operate very much like a power plant. We run 24/7 on contracts
4 that we have signed with various utilities over the years. We
5 have typically delivered our commitment at availability rates
6 in excess of 90 percent. So we know how to convert biomass
7 into electricity, we have been doing it, and I'm hear to tell
8 you that we have the ability to expand very significantly both
9 our existing plant assets as well as in other parts of the
10 state of Florida.

11 And let me use this opportunity to make a quick
12 statement because there has been discussions over how realistic
13 is 20 percent. Do we really have the ability to do much more
14 than what we are doing today. And, we are people that -- our
15 principal business is farming. We understand we believe,
16 agriculture, we have a tremendous amount of respect for how
17 difficult it is to do that successfully and to do it on a
18 sustained basis, so I don't make these remarks casually.

19 But we believe with the current technology for
20 growing dedicated energy crops, where you are really focussing
21 aggressively to try to get the largest amount of dry matter per
22 acre, as opposed to largest amount of sucrose per acre, or
23 other parameters, you want to get as much dry matter as you can
24 convert into energy per acre. And with the kind of conversion
25 technologies that are available today, I would say that a

1 20 percent RPS in the state of Florida, which is a very huge
2 electricity base, could be achieved with a land base of
3 something in the order of 500,000 acres of biomass.

4 My good friend Jay Levenstein, opened this session
5 this morning by saying that the available farm land and
6 forestry land in Florida is something like 25 million acres.
7 So I'll give you all kinds room to say that I'm off here and
8 I'm off there, and I am probably off in several different
9 directions, but you are talking about a relatively small
10 percentage of the land arable base that we have, that if it is
11 dedicated to energy crops using extensive agricultural
12 techniques and modern efficient conversion processes can meet a
13 20 percent RPS.

14 That is not to say that we think we support solar, we
15 support wind, we support all technologies that can sort of earn
16 their way to be considered by the consumer, but, my purpose
17 here is simply to give you context, to give you context. The
18 purpose of my talk really is to address the subject of the
19 favorable impact that the use of biomass generation has on the
20 Florida economy. I talked about our power plant here which we
21 are very proud of. We use about 1.8 million tons of biomass
22 fuel a year. It's 100 percent biomass. We only use fossil
23 fuels for start-up purposes, otherwise it is 100 percent
24 biomass.

25 Biomass is renewable and clean and all of those good

1 things, but it is a local Florida indigenous resource. We grow
2 it here; we process it here, and we use it here. That fact has
3 very powerful economic implications, and that is what I would
4 like to address in the rest of it. And I won't take much more
5 than five minutes here.

6 I made the point here that biomass is a local fuel.
7 I don't have to tell you that all of our oil and all of our gas
8 and all of our coal comes from out of state. So, about four
9 years ago we were trying to participate in this policy debate
10 over renewable energy and whether renewable energy should have
11 a place at the table. And everything that I heard was the
12 problem with renewable energy is that it's more expensive than
13 conventional energy and, therefore, it is going to cost our
14 consumers more money if we have renewable energy.

15 Well, I certainly don't accept that statement as
16 valid today. I think that biomass can be competitive with
17 conventional forms of energy, particularly with oil at \$70 a
18 barrel and gas at 7 or \$8 a million Btu. So I think that
19 biomass can be competitive. But I think that looking at what
20 is the impact of the customer bill, it's very, very important,
21 we are very sensitive to it, but that is not the only valid
22 question that should be asked. The other question that should
23 be asked is what is the impact of these different forms of
24 generation on the Florida economy. What does it do to jobs;
25 what does it do to gross state product; what does it do for the

1 Florida economy. And so that's the kind of question that we
2 attempted to address four years ago to try to broaden the
3 debate, to try to put into play the different, you know, and
4 additional concept beyond the customer bill. So, we
5 commissioned a study by the economic consulting group, the
6 Washington Economics Group, they're based in Miami, and they
7 have done work for private industry, for the government, for
8 the state of Florida. They are a very, very qualified economic
9 consulting firm. They could not be here today, so I am a
10 little bit pinch-hitting for them, even though I am certainly
11 not an economist.

12 But what we asked them to do was to look at two
13 alternatives. One alternative that would be generating
14 electricity using natural gas and advanced combined cycle
15 technology, which was the technology in vogue three or four
16 years ago. And so that was a bogey. And then to compare that
17 to generating electricity with biomass as a fuel. An
18 equivalent amount of electricity from gas combined cycle and
19 biomass, and then to take that and using the models and the
20 data which they use and which is widely accepted in the
21 econometrics world, to try to forecast the economic impact of
22 generating electricity with natural gas versus generating
23 electricity with biomass fuels.

24 Let me show you the next graph. I talked about the
25 methodology they used. And by the way, the Public Service

1 Commission has a copy of this study. We are happy to share it
2 with you. It is four years old, but I think it is still very
3 current. In fact, it's current plus because it was done when
4 gas was selling at about three bucks a million Btu. Gas today
5 is whatever, much more than that. So the difference is
6 dramatic.

7 Here is a very sort of key point to the study in that
8 big green circle. When you look at combined cycle, 90 percent
9 of the dollars spent to generate electricity leave the state,
10 they go elsewhere to other parts of the country or leave the
11 country altogether. Because most of the cost is fuel. So, you
12 know, you're paying for the natural gas. You pay it to the
13 company in Texas, or you pay it to somebody, and it leaves the
14 state. When you look at biomass, it gets back to the thing
15 that biomass is local. The majority of our expense also is
16 fuel. And 86 percent, I think is the figure there, of the
17 dollars that we spend generating electricity stay in Florida.
18 And they generate jobs, labor income, and contribute to the
19 gross state product.

20 So this study took that fundamental fact and
21 projected what that meant in terms of -- I jumped ahead here.
22 There is a time delay, I guess -- what it means in terms of
23 employment, labor income, gross state product, and state and
24 local taxes. And this is dollars per thousand megawatts hours
25 of electricity, I'm sorry, and you can see that the impact of

1 biomass is in the order of ten times more favorable to the
2 Florida economy than the impact of fossil fuels.

3 Again, we could argue about whether it's ten times
4 more, or eight times more, or 12 times more. It's orders of
5 magnitude more simply because most of the money that we spend
6 generating electricity stay in the state versus most of the
7 dollars spent generating with natural gas exiting the state.

8 The final graph there is simply greater detail. I'll
9 simply -- at that point, the very first line we were looking at
10 three scenarios, the scenario where there is a two percent RPS,
11 a second scenario with five percent, and then seven percent.
12 And when we took it all the way down, economic impact.

13 Again, the study is available to your staff. We will
14 make more copies available. If you think it is necessary, we
15 can update it. I think the message is there. So my message is
16 please consider certainly the cost to the consumer, but also
17 consider the broader impact on the Florida economy when you do
18 an RPS. It is very favorable. Beyond this, we need to have
19 incentives to develop technology here. Unless you have the
20 opportunity to sell your product, there is not going to be any
21 investments in technology, there is not going to be any
22 development of technology. I don't think anybody can dispute
23 that.

24 This also makes the point that it is important, I
25 think the gentleman from Progress Energy made this point, the

1 RPS has to support Florida resources. If the RPS is opened up
2 to other states, then this favorable economic impact and the
3 opportunity to develop technology using Florida resources, a
4 lot of it is diluted at best.

5 Those are my remarks, and I appreciate your time.
6 Happy to answer any questions.

7 CHAIRMAN EDGAR: Thank you, Mr. Cepero.

8 Commissioners, any questions at this time? Seeing
9 none. Thank you very much.

10 MR. CEPERO: Thank you.

11 CHAIRMAN EDGAR: Okay. That concludes Section C on
12 our agenda. And I think we can keep moving, so we will move on
13 to Section D, which we titled operation of a RPS. We have
14 asked our speakers to talk to us about issues regarding a
15 tradable renewable energy credit system, and other issues
16 related to that. And I'm going to call upon our first speaker,
17 which is Jane Maxwell.

18 MS. MAXWELL: Thank you for the opportunity to speak
19 to you. I'm Jane Maxwell. I'm a project consultant with Waste
20 Energy Solutions, and we are a company that builds anaerobic
21 digesters using a wide assortment of wastes, including a lot of
22 cow manure and other things. So I'm sure you are glad I'm
23 doing this after your lunch.

24 We are licensed with a Danish company called Niras.
25 This is really proven technology. Niras has been operating

1 these digesters for about 20 years, so this is simply easy, in
2 a sense proven technology to use. Niras' engineers will be
3 overseeing our projects.

4 The waste we use, like I said, they're manure and
5 other wastes which I will discuss a little bit more. But
6 reducing odor, what comes out of the digester smells a lot
7 better than what went in, increasing nutrient accessibility and
8 reducing nutrient leaching are very important factors, because
9 what we are using is manure, or one of the things that we are
10 using is manure that causes pollution problems on the farms.

11 We are CO2 free or neutral. So we're going to use --
12 in our systems we use both mesophilic and thermophilic
13 processes. Mesophilic and thermophilic are just different
14 temperatures. Our digesters are fully mixed, which is
15 important. I'm just going to go through this kind of quickly,
16 because I know we're behind, but I'm just trying to point out
17 that this is technology that really works, because there has
18 been problems with some digesters that don't work. But this is
19 technology that has been used and proven to work. And as Niras
20 says, we have made all the mistakes and learned, so that is
21 going to help us a lot.

22 This is sort of a simple diagram of how our systems
23 work. The input divided into three parts there; urban,
24 agriculture, and industry. Actually in our case about a third
25 of our input will put come from agriculture and about

1 two-thirds from urban. The three treatments of our waste will
2 be things like mixing or sterilization, hygienization of sewage
3 solids, and that sort of thing. From the pretreatment it goes
4 into the digester where the biogas is made. Post-treatment
5 means separating the fluids that come out into, of course,
6 there is the biogas, but then there is also fluids that are --
7 one section of the fluid will be nitrogen, another one will be
8 potassium, and then there is the solids that can be used as
9 potting soil.

10 This is a -- and you can't read it -- this is a chart
11 showing different gas producing abilities of different feed
12 stocks, and the tall ones are things like oil and protein. It
13 shows, if you could see it, that the cow manure and pig manure
14 and sewage do not produce a lot of biogas, so why do we want
15 cow manure? Well, it's the bacteria in cow manure that keep
16 the digester going. We need to have that cow manure. It is
17 very, very important to an effective reliable anaerobic
18 digester.

19 This, again, is a diagram showing the simple ways
20 that -- simplifying how this digester works. The manure going
21 into one tank, possible sewage solids going into a
22 sterilization system, they go into the reactor, the digester,
23 gas comes out and goes into gas storage. The sludge gets
24 separated. The fluids get separated out.

25 This is an actual photograph of the plant. This

1 small building, the small white building in the front
2 foreground there is where the trucks would pull in to unload.
3 We have it fixed so that odors are not a problem. The
4 buildings are designed to eliminate the odor problem for the
5 neighborhood. The stuff coming out of the truck goes into a
6 storage tank. We keep at least three days storage of waste
7 materials on hand. The three tall tanks are thermophilic
8 digesters. There is a little bubble looking thing there, that
9 is the gas storage. Then there are two other digesters. Those
10 flat round things are actually mesophilic digesters, and the
11 building in the front is where the engines are and the
12 separation type technology. So that's just a view of how a
13 plant looks.

14 Anaerobic digestion of waste. Bacteria digests
15 organic compounds in an oxygen-free environment and produce
16 biogas, and anaerobic digestion is a naturally occurring
17 process that involves complex biochemical processes carried out
18 by a consortium of bacteria. So if you wanted to know, there
19 you have it.

20 Biogas is up to 65 percent methane, 35 to 40 percent
21 carbon dioxide, trace amounts of hydrogen, ammonia, and
22 hydrogen sulfide, and it can be used as a fuel in internal
23 combustion engines to produce electricity. It can be used in
24 boilers or it can be stripped of the CO2 and contaminants and
25 injected into a pipeline. It can also be used like liquefied

1 natural gas or compressed natural gas, because actually the
2 methane when it is cleaned is exactly the same thing as natural
3 gas.

4 What about potential Florida projects. Right now we
5 are working on this project. There are 23 dairies in what are
6 called the middle Suwannee basin, and their manure is causing
7 serious environmental concerns. And we can take that manure
8 and make it from a problem into a benefit. Also, recently for
9 any cities new regulations involving grease trap cleanouts that
10 are required for restaurants. Right now they take that grease
11 and mix it with lime and land apply it, but that is not a very
12 good solution. We can use that grease in the digester. Local
13 towns and prisons have sewage solids that is being land
14 applied. Again, that can be put in the digester and made from
15 a problem to a solution.

16 Large amounts of food waste are either going into
17 landfills or municipal wastewater and that causes problems for
18 the wastewater systems or for the land. It makes the landfills
19 have to be bigger than necessary. But one of our Waste Energy
20 Solutions digesters is taking in about 800 tons, which is what
21 we are planning, we will fix these problems.

22 So, how does our program work? Well, we have a
23 consultant with 30 years of experience with state and federal
24 funding that is assisting the farmers in requiring funds for
25 upgrading their manure separation, and that's kind of where we

1 are at right now. These farms, in order for us to take the
2 manure to the digester, we have to get the manure separated
3 from the water. They use a lot of water in most of the farms
4 for flushing the manure, and we want to leave the water at the
5 farms. We want to take the manure and get out the polluting
6 problems with the nitrogen and the phosphorus, we want to take
7 them off the farm.

8 So, that can be done, it just needs some funding.
9 And we believe we will be able to get that for the farms, but a
10 lot of it is cost share funding which means the farmers are
11 supposed to put up 25 percent, but many of these farms really
12 can't afford a 25 percent cost share. So Waste Energy
13 Solutions will probably come up with that money, and they will
14 eventually get that paid back because what happens is the
15 nutrients that come out of the digester can be sold and farmers
16 get income from selling that after all the financial
17 obligations have been paid.

18 And, of course, there is no out-of-pocket costs to
19 farmers. Now, people may not be aware, if you think the price
20 of milk is high that maybe you think farmers are getting rich,
21 but in real life farmers, especially dairy farmers, are having
22 trouble making ends meet. Many of them have gone out of
23 business, and so they really could use help. Farmers get back
24 the nutrients in solution, and it is much easier for them to
25 apply these without pollution problems. The nutrients they get

1 back are easier to regulate, they don't have the runoff
2 problems. And like applying raw manure, it's very difficult to
3 regulate that to just what the plants take up.

4 Waste Energy Solutions gets income from tipping fees,
5 not from the farmers, but any other wastes that are brought
6 into the digester tipping fees are paid and, of course, from
7 selling power. Society's wastes are converted from a problem
8 to a solution; nutrient odor problems solved; dairy farmers
9 stay in business; and Florida needs dairy farmers. Why?
10 Florida dairy farmers are important to meeting greenhouse gas
11 reductions and renewable portfolio standards.

12 Well, right now Florida is importing about 15 percent
13 of your milk and that uses fossil fuels. And, of course,
14 fossil fuel use increases greenhouse gases. Dairy manure, as I
15 said before, is very necessary for co-digestion. This will
16 help clean up wastes from many sources, including wastes from
17 other renewables such as spillage from ethanol and glycerine
18 from biodiesel. There are a lot of plans now for biodiesel and
19 ethanol plants in Florida, and those wastes could become a
20 problem, but they certainly can go in a digester and not become
21 a problem. Dairies can be important contributors to renewable
22 energy, so Florida dairies keep jobs and money in Florida. We
23 just really need more dairies.

24 Advantages of Waste Energy Solutions' biogas for
25 utility providers. Methane is very reliable. You don't have

1 to wait for the wind to blow or the sun to shine. Florida will
2 have four to six digesters, so should one have a problem we
3 will still have the others operating. We will have at least
4 three day of feedstock, so if a truck breaks down or something,
5 we will be able to keep going. Three to four 1.6-megawatt
6 generators. If one is down, the others will be running.

7 Located near power users, so it is distributed power.

8 Possibility for a number of plants in Florida.

9 Okay. We're burning the methane, and why is burning
10 methane from biogas so important for the environment? It is
11 considered to be 21 times worse than CO2 in causing global
12 warming. Removing a ton of methane from the atmosphere would
13 be equal to getting rid of 21 tons of CO2. Burning methane
14 converts the methane to CO2, so it doesn't get -- what is
15 established is that the CO2 equivalent of methane is 18. Not
16 21, but 18, because you do end up with CO2. But the burning
17 methane does not increase carbon in the carbon cycle.

18 We will take a quick look at the carbon cycle. We
19 call this the contemporary carbon cycle because it's only
20 carbon -- it is not the carbon from fossil fuels, let's put it
21 that way. So we have the CO2 in the atmosphere, and as we know
22 it is increasing and it is the main concern for global warming,
23 but plants use CO2 to make carbon compounds. The plants get
24 consumed as food. Animal and plant respiration produces CO2
25 which goes back into the atmosphere. That's part of the carbon

1 cycle. But, plants could also be burned like in forest fires
2 or any burning of biomass, and, of course, that carbon will go
3 right back to the atmosphere.

4 Much of the carbon that animals consume and all of us
5 people, too, ends up in the manure. Carbon source. Other
6 carbon sources are the food wastes from the meat, plant
7 sources, decaying organic material, so any organic substance as
8 it decays, rots, whatever is producing methane. And whether
9 you burn the methane or not, these carbon sources are producing
10 that methane. But if you do burn it, then the methane goes
11 back to carbon dioxide and water as we'll see in a moment. But
12 this carbon is going back in. It goes back around the cycle,
13 and we will take another look at this.

14 It says a need for speed. The fast carbon cycle is
15 important in order to prevent even a temporary increase in CO2.
16 So what I'm trying to say is that in our, process the things
17 that we are digesting or the carbon that goes back in is
18 brought back out again out of the atmosphere by the crops that
19 grow and so it is a fast cycle. No carbon is accumulating in
20 the atmosphere. We are going to compare that to the slower
21 carbon cycle that can increase atmospheric carbon for 20 to
22 50 years. Burning forest biomass is a slow carbon cycle. You
23 have trees that took 20 to 50 years to grow, you cut them, you
24 burn them, and it is going to take -- the CO2 goes back into
25 the atmosphere and it will take another 20 to 50 years for the

1 carbon to be taken out of the atmosphere. Even if you are
2 planting seedlings and so forth it takes that time. And at
3 this stage of our planet's history, we really don't want to be
4 risking putting -- even though it's coming back out, it is
5 still putting that carbon back in for possibly another 20 or
6 50 years. So any burning of trees for energy has got to be
7 taken really seriously as to whether they can get that carbon
8 back out fast enough. Okay.

9 In states with established renewable portfolio
10 standards, methane from anaerobic digesters of organic
11 materials is a Tier 1 renewable energy. I have noticed that a
12 number of states that have RPSs have Tier 1s and Tier 2s, and
13 methane from anaerobic digesters is always Tier 1. Renewable
14 energy credits for Tier 1, I have seen it been given 110 to
15 140 percent value of credits.

16 And what is the value of a renewable energy credit?
17 One thing discussed in Pennsylvania where our main office is
18 located is that wind generation costs minus the coal generation
19 costs equals the price of a renewable energy credit. And, in
20 general, it costs four to six cents more per kilowatt to get
21 wind generation to a customer, so that's the difference that
22 equals the value of a renewable energy credit. And the concept
23 of renewable energy credit, as we have been discussing today,
24 is to equalize the real cost of coal and other fossil fuels
25 with the cost of renewables. It is difficult to estimate this

1 cost, but it would include health care costs incurred from
2 pollution, as well as environmental costs, and global warming
3 risks.

4 Okay. Reasons that a tradable renewable energy
5 credit system should be used toward meeting the RPS goal.
6 Tradable RECs can be used to promote the development of new
7 renewable resources, not simply benefit existing generation,
8 and that has certainly been something that everybody -- well, a
9 number of people have said here today.

10 Requiring a percentage of renewable energy credits to
11 be Tier 1, the greenest ones, will decrease the time it takes
12 for greenhouse gas reduction goals to be reached favoring the
13 cleanest and greenest. Methane destruction makes anaerobic
14 digestion Tier 1. I said that before. Tradable credits have
15 proven to be a successful system of reducing other pollutants,
16 like reducing the acid rain and ozone depletion.

17 Renewable energy credits have proven to build new
18 renewable generation. For example, the wind generation
19 increasing quickly in Texas. A lot of people credit that to
20 having had a renewable energy credit program there. Renewable
21 energy producers can sell energy and credits separately, so an
22 electricity provider that does not own or purchase enough
23 renewable energy capacity could purchase credits instead. That
24 gives some flexibility, so that might be a good thing to keep
25 in mind.

1 Renewable portfolio standards legislation using
2 tradable RECs can add some security to a market for renewable
3 energy thereby encouraging investment, and I have heard some
4 other speakers say that sort of thing today, too.

5 The trading system should be limited to Florida only
6 or to southeastern states. If the trading region is not
7 limited, renewable energy suppliers in regions where producing
8 renewable energy is cheaper than in Florida will have a big
9 advantage. If we didn't have enough renewable energy in
10 Florida, maybe there would be at least a priority for Florida's
11 renewable energy to be -- part of the trades would be mostly
12 from Florida. Encouraging renewable energy suppliers to locate
13 in Florida to build new generation will help Florida meet
14 greenhouse gas goals, and encouraging renewable energy
15 suppliers to locate in Florida will be good for Florida's
16 economy and energy security. That's it. Questions?

17 CHAIRMAN EDGAR: Thank you. Are there any questions?
18 Commissioner Argenziano.

19 COMMISSIONER ARGENZIANO: Take me back to, I guess,
20 the "how our program works" slide. When you indicated that
21 farmers get income for selling nutrients after all financial
22 obligations have been met, whose financial obligations?

23 MS. MAXWELL: Well, what that was referring to --
24 like, the farmers get funding perhaps, it's cost shared. So,
25 there would be -- Waste Energy Solutions would probably end up

1 putting up the 25 percent or so, possibly. Hopefully it would
2 be less, but if they had to put up 25 percent of the cost share
3 to upgrade the systems at the farms, then that would be paid
4 back through the nutrient sales, and then after that is paid
5 back then the farmers would be able to put money in their
6 pockets from the nutrient sales. Does that make sense?

7 COMMISSIONER ARGENZIANO: Yes. But that could take
8 an awful long time, couldn't it?

9 MS. MAXWELL: Not terribly long, because the
10 nutrients would be -- well, there's a large supply.

11 COMMISSIONER ARGENZIANO: The farmers, the 23 farms
12 that you mentioned in the Suwannee area have not eliminated,
13 but they have reduced by quite a bit the nitrate flow through
14 the Suwannee River partnership program that was there. And I
15 was just wondering if that's an incentive for the farmers to
16 get in, if it does take a long time to recoup their money.

17 MS. MAXWELL: Well, we will be talking about that.
18 But from the preliminary discussions I have had with the
19 farmers, they are very interested in doing this because they
20 are still having a lot of problems with their manure, and they
21 are constantly under pressure to do something about it. So, it
22 seems as though they are ready to do this, but we won't know
23 until we start signing agreements.

24 COMMISSIONER ARGENZIANO: Are you in discussion with
25 any of the horse farms in the Ocala area, because that has been

1 a problem there?

2 MS. MAXWELL: Horse manure is a problem because of
3 the amount of sawdust that they have in that manure. We could
4 possibly digest some of it, but it couldn't be a major part of
5 our digester program.

6 COMMISSIONER ARGENZIANO: Okay. Thank you.

7 CHAIRMAN EDGAR: Any additional questions? None at
8 this time. Thank you.

9 MS. MAXWELL: You're welcome.

10 CHAIRMAN EDGAR: Joseph Treshler.

11 MR. TRESHLER: Madam Chairman, Commissioners. Since
12 you have seen probably a lot of this already today since
13 Mr. Ferraro and I work for the same industry and share things,
14 and Mr. Cepero and I seem to speak a lot together, I will try
15 to make mine a little bit briefer. I know we are tight on
16 time.

17 I would like to be able to just say my goal here is
18 to talk about the current contribution that energy-from-waste
19 or waste-to-energy facilities make to the state, what our
20 potentials are again, what additional rule will eventually come
21 from this, identify vehicles to promote renewable energy, and
22 to give you a little background on our company, also.

23 When we look at renewable energy in the United
24 States, it is interesting that 9 percent of it is renewable and
25 only two percent of that is nonhydro. And within that two

1 percent, 67 percent of it comes from biomass sources. Energy
2 from waste generates 34 percent of the nation's biomass
3 renewable energy, and our company, Covanta Energy, is a leader
4 in this field with 7,900 gigawatts produced at 32 facilities.
5 We also run wood waste facilities and biogas facilities.
6 Basically, we provide 10 percent of the nation's nonhydro
7 renewable energy.

8 Well, what is energy from waste technology? That's
9 one thing that wasn't explained. There is a real social impact
10 to energy from waste. We are solving some of society's major
11 challenges. With the dependency on fossil fuel in this country
12 and in the state of Florida, energy from waste provides clean
13 renewable electricity helping to solve that part of the
14 problem.

15 Climate change. As I think you have heard
16 previously, energy-from-waste facilities are at least net
17 equivalent and net reducer of greenhouse gas because other land
18 options such as a landfill will generate methane. When you use
19 a waste-to-energy facility you don't generate that methane, you
20 are not contributing to the carbon balance.

21 Population growth. It is a safe reliable means of
22 disposing of a social problem. Every person who comes to the
23 state of Florida and adds to our population also brings between
24 1.4 and 1.7 tons of waste with them that has to be properly
25 managed. What better way to do it than to recover the energy

1 from that waste rather than using other fossil fuel sources?

2 And resource management. Back in the mid-'70s, the
3 Florida legislature passed a mandate telling the large
4 populations centers of the state to look at resource recovery
5 facilities, the energy from waste facilities in the state are a
6 result of that practice. The mandate was to look at resource
7 recovery and energy recovery as a way to protect the land,
8 water, and air resources of the state. The benefit that the
9 state got at that time and enjoys right now is over
10 500 megawatts of renewable energy being generated in
11 11 communities around the state of Florida.

12 A ton of garbage produces about 550 kilowatts. It
13 recovers about 50 pounds of metal, reduces the space necessary
14 for final disposal to 10 percent of the original volume that
15 would have been there and produces no methane. In the United
16 States, 13 percent of the nation's waste is handled through
17 energy-from-waste facilities, 2,700 megawatts. That is
18 16 million megawatts annually.

19 And it's proven technology. It is utility grade
20 technology. Mr. Ferraro made a comment and said that
21 waste-to-energy facilities were getting more expensive. Well,
22 we bought the same boilers. We bought from the same boiler
23 vendors. We buy from the same air pollution vendors, and the
24 same turbine vendors. So when you say energy-from-waste
25 facilities have increased in cost, so are traditional power

1 plants and so is anything else that is built out of metal and
2 recovers energy. All of those costs are coming up because it
3 is a world commodity problem at this point in time. But we are
4 utility grade with performances that match the utilities.

5 Right now our renewable recovery in the state is
6 quite low. It is about 1,000 megawatts. Half of that comes
7 from waste to energy. So that is basically two percent of the
8 total generation, or five percent of the existing 20 percent
9 goal right now is coming from biomass sources, or about 1,000
10 megawatts, and waste to energy is 500 megawatts of that.

11 When you look at waste, one ton of garbage is
12 equivalent to a barrel of oil, or ten MCF of natural gas. That
13 is what it replaces that has to be imported or pulled out of
14 the ground. And it's independent. It is generated every day
15 whether we like it or not, despite all of our efforts to
16 recycle. You will find energy-from-waste communities are high
17 recyclers. They are not on the bottom end. We promote
18 recycling. We would like to recycling increase.

19 Right now in the state of Florida, we generate about
20 31.2 million tons of MSW. That is equal to 31 million barrels
21 of oil every year. Currently about six and a half million tons
22 are handled through the state's energy-from-waste facilities,
23 okay. That eliminates the need for 6.5 million barrels of oil,
24 and it saves about 8,124-acre feet of landfill space in the
25 state, another resource.

1 Also, there was a question before on solar. A
2 question about emissions. Energy from waste facilities as a
3 result of the Clean Air Act of 2000, or 1999, excuse me,
4 produce renewable energy. The energy produced has less
5 environmental impact than basically any other source of
6 electricity, and that's a quote from the USEPA. We are a net
7 reducer of greenhouse gases, and I think that has been
8 explained before. You aren't landfilling it, you are also
9 recovering the metals, you are not pulling new metals out of
10 the ground that have to be smelted in a primary basis to be
11 formed. They are recycled.

12 More is being done in the state. I think Mr. Ferraro
13 mentioned before that Lee County is expanding their
14 waste-to-energy facility. That facility is in start-up right
15 now. Hillsborough County has broken ground and is expanding
16 their facility by 50 percent. Palm Beach County is looking at
17 it, and so is Pasco County. They are doing this without any
18 incentives because they have the dedication to protecting the
19 environment, but it has become a very hard battle for any
20 community to do this. Because the things that drove the
21 development of these facilities in the mid-'80s and early '90s,
22 which were capacity payments based on a coal-fired unit
23 disappeared in 1991, and hence no more facilities were built
24 because the economics weren't there to support it.

25 When a community looks at solid waste disposal

1 options they have to balance their books. It's an enterprise
2 for them to count, and they have to look at the cost. They are
3 obligated also to look at the lowest-cost option, and if they
4 can't recover enough revenue from electricity which is a
5 by-product, not the primary source, a landfill may become the
6 option that the community chooses, which is a methane generator
7 versus a renewable energy generator.

8 Over 18 million tons of MSW are still being
9 landfilled every year in the state. We're not going to get it
10 all, but if we did, that's 1,130 megawatts. That would be 10
11 percent of the goal, and you can find it in eight communities.
12 And I'm not picking on these communities, it is just showing
13 how much, and it is concentrated. The same type of mandate
14 from the '70s, once again, came out to look at renewable energy
15 as it did to protect the basic air, water, and soil of the
16 state, that would be a help. That's something that I know you
17 have no control over, but, again, communities are looking at it
18 and it all comes back to how do we make this happen. What are
19 the right incentives, and that comes to the situation where we
20 haven't had the type of energy rates that could stimulate
21 further growth. And there is no functional wholesale market in
22 the state that allows the market to determine what a new
23 process should be.

24 We also are looking at a future where 81 percent of
25 the electricity, until this now, was to come from oil and

1 natural gas. Renewables must be part of the changes. The
2 Governor with Executive Order 127, 07-127, basically said we
3 had to limit it and we had to look at renewables and had to
4 move things forward.

5 So how does this happen? It's by looking and
6 renewing energy from waste contracts that by value are the most
7 expensive fossil fuels. Not the cheapest way out. But we
8 always seem in this country to find a way to take the cheapest
9 way out of things, and that shouldn't happen when we are
10 looking at the environment and the health of the future.

11 We also need to develop a functional liquid wholesale
12 market for electricity. Let the market take care of this.
13 Even with an RPS, the market should take care of how an RPS --
14 set goals, make it worthwhile for there to be investment by
15 having long-term contracts available. And I'll pass this line
16 in the RPS because you have seen it in about six times here
17 today. But, if you look at it, Florida and 22 other states,
18 and Washington, D.C. have defined energy from waste as
19 renewable. Twelve of them also have defined energy waste as
20 eligible for renewable portfolio standards. We are efficient,
21 we produce a good amount of electricity, we also have the most
22 advanced air pollution controls of any fossil fuel generator.
23 And we are compatible with recycling.

24 Keys to establishing a successful portfolio. You
25 have heard a lot of this already today. Clear targets, annual

1 targets that have to be met. They need to be aggressive
2 targets. That's the only way you are going to get innovative
3 thinking. A low bar only gets low performance. Okay. Define
4 the technologies and the fuels and then let the market foster
5 these technologies and make them grow. No one is looking for
6 subsidies. What we are looking for a fair payment and the
7 right to make a profit. And I think we have already talked,
8 most of us, about defining the alternative compliance payment.
9 Mr. Ferraro remarked about how Massachusetts had one and people
10 just paid it. You have to set that rate so there is real
11 innovative thinking on how do I move the technology forward,
12 than just to pay the penalty.

13 When the Governor was announcing his executive orders
14 there was some push back real quick that this was going to be
15 bad and this was going to effect the state. It was going to
16 effect the taxpayer, and that we are not going to be able to
17 handle it, but he stood firm and basically said Florida is a
18 beautiful precious environment that needs to be protected.
19 This is our issue and we need to deal with it. Thank you very
20 much.

21 CHAIRMAN EDGAR: Thank you.

22 Commissioners, any questions at this time? No.
23 Thank you.

24 And next on my list is Katrina Pielli with the
25 Environmental Protection Agency.

1 Welcome.

2 MS. PIELLI: Good afternoon. Thank you for having
3 me. Just to clarify briefly, I work for the voluntary side of
4 the agency, so not the enforcement side, just to set the stage
5 appropriately.

6 And the work that we do is helping states across the
7 country identify and implement programs and policies that lead
8 to increased use of clean energy. So I'm happy to be here and
9 talk about some of the best practices and lessons learned from
10 these states and share that with you as you go down this road.

11 What I would like to talk to you about today, this is
12 the agenda. I'm going to go fairly quickly through the
13 introductory remarks. I understand that you have seen a lot of
14 this. I have been here since about noon, and I'm trying to
15 answer some of the staff questions that they put forward in
16 advance.

17 So we at the EPA for the work that we do, we define
18 clean energy as both demand and supply-side, and we include
19 energy efficiency, renewable energy, and combined heat and
20 power in that definition. So we look at things that deliver
21 clean, reliable, and low-cost opportunities for states.

22 This is probably not new to all of you. Clean energy
23 can help with a lot of the state energy challenges from
24 transmission congestion issues, load pockets, rising demand,
25 air quality pressures, CO2 risks, and on the right-hand side of

1 this slide are the different benefits that can be provided.

2 So energy portfolio standards. This is a term that
3 we use largely because as you have heard already, states are
4 approaching what a portfolio standard looks like in all sorts
5 of different ways. They are calling them renewable, they are
6 calling them alternative energy, and also energy efficiency.
7 So just to keep the discussion going, since you all are just
8 starting down this path, I will be using the term EPS, or
9 energy portfolio standard.

10 And the one point on here I would like to talk about
11 just for a moment is the rate impact. It's under the first
12 point, under policy advantages, and that comes from a study
13 that was done in 2005 by Lawrence Berkeley National Lab, and
14 they looked at the rate impact from various portfolio centers
15 across the country, and they found savings from .3 to
16 .7 percent on average to a cost of .3 to .6 percent. And when
17 you take that into the average impact on the residential bill,
18 it was savings between \$2.4 a year to \$4.6 a year on average,
19 to costs from \$3 to \$3.3. So just to put this into a range,
20 I've heard a lot of folks this morning talk about impact to
21 ratepayers, so just to toss that out there for you.

22 The graph that's different on here than the graph you
23 have seen all day are the stars which indicate which states
24 include combined heat and power or waste heat recovery as an
25 eligible resource. Right now there are seven states, and a map

1 that I will show you later has colors for states that include
2 energy efficiency.

3 Again, I'm not going to spend a lot of time here.
4 This just list out the states and what their renewable
5 portfolio standard or energy portfolio standard targets are.
6 They range between 1 and 25 percent. And just to drive home
7 the point of that, Footnote Number 1, that states are typically
8 basing their percentage off of what they already have in state,
9 so the larger percentages you tend to see from states that have
10 a large amount of existing in-state resources.

11 So the designer portfolio standards, they really tend
12 to be geared toward fitting the state policy objectives, the
13 market conditions, and also the clean energy potential in the
14 state. The four elements here are the key features that states
15 tend to look at when they are designing the standard.

16 I will talk a bit about my remarks Number 2 and
17 Number 4, applicability and compliance. But just a brief word
18 on goals and objectives. It is important to articulate what
19 these are early in the process to really set the stage clearly
20 for investors and other organizations who are interested. And
21 on eligibility there is a number of questions that states tend
22 to ask themselves, including what sources of technology are
23 eligible, how do you treat existing versus new, which we just
24 heard some folks talk about, what geographic areas are
25 eligible, is it in-state, is it power pool, is it regional, et

1 cetera. And then finally, are customer versus central type of
2 applications treated differently. So large wind farms versus a
3 distributed resource, for example. Those are the type of
4 questions that states are wrestling with.

5 The key features here are design elements and best
6 practices that we have been able to glean from states across
7 the country. The items with the blue stars are those that I
8 will talk about in a little bit more detail in a few moments.
9 Again, on the time horizons, most RPS are established
10 approximately ten years out, and we heard the gentleman, one of
11 the developers earlier say ten years, that's not very much for
12 a contract for a landfill gas system. Ten years is considered
13 a long-term contract by a number of the states that actually
14 have contract requirements. California, Montana, Nevada, and
15 Colorado each have long-term contract requirements, ten years
16 minimum. Colorado has a 20 year minimum. So just to give you
17 a sense of what some other states are doing on that.

18 Mandatory or voluntary. To be quite frank with you,
19 states are finding that without a voluntary -- or, excuse me,
20 without a mandatory program that the investment just isn't
21 happening. So with a mandatory program obviously would come
22 some type of either compliance or penalty that would go along
23 with that, which I'll talk to you a bit more about. And then
24 finally, cost-recovery mechanisms for utilities obviously is an
25 important element that ties back into the rate impact for the

1 customers.

2 This is very small print, and I apologize for that.
3 It is just essentially what you have all seen before, which is
4 the resources on the left and the states on the right with a
5 bunch of dots. There are a few dots missing for energy
6 efficiency, which I apologize. There should be dots for
7 Colorado, Illinois, New Jersey, Texas, and Vermont for
8 efficiency. That's the error on this chart, and I apologize
9 for that.

10 One quick comment when we talk about the definition
11 of what an renewable energy certificate or what an eligible
12 technology might look like. EPA runs a voluntary program
13 called the Green Power Partnership, and they tend to rely on
14 market definitions of renewable energy certificates, and they
15 look to the Green-E certification, so I will just toss that out
16 there for your reconsideration.

17 So at this point what I would like to say is really,
18 again, that we are seeing a trend come out where states are
19 looking to actually fit the EPS to their state policy
20 objectives. You have heard Pennsylvania discuss coal, you hear
21 Connecticut and New Jersey talk about efficiency, and it just
22 really tends to be what states are doing to try to hit multiple
23 policy objectives with this one mechanism.

24 I know we were having some discussion earlier about
25 potential studies and how you all want to do something quickly

1 and act quickly, and I would encourage you in parallel with
2 that to still go ahead and conduct a potential study. Not
3 preventing you at all from acting earlier, but just to really
4 try to get something out there. And under the national action
5 plan for energy efficiency we are actually releasing a
6 guidebook on how to conduct a potential study, and we have
7 found that you can actually complete a setting the stage or a
8 building the case type potential study for efficiency in about
9 a month. These are very high level, but it will give you a
10 sense of what the potential is out there, and it's fairly
11 similar to what ACEEE recently completed for the state of
12 Florida not too long ago.

13 Another component here is to understand the
14 implications of your new versus old renewables, whether or not
15 you're looking to incentivize new versus old and just
16 understand the implications there.

17 Another component is when you think about doing an
18 RPS, North Carolina, for example, recently found that if they
19 included energy efficiency in their RPS that the overall cost
20 was dropped dramatically. And I'll show you a graph from their
21 study in a moment to support that.

22 And then finally, using CHP is a nice benefit for
23 also incentivizing efficiency at the industrial and the
24 commercial level while also recognizing not just electricity
25 but thermal. So, I would like to take just a second, and I

1 will go quickly because we are running long, on how to include
2 CHP in your EPS if you are interested, because it is a little
3 bit more complicated, but Connecticut has done a great job
4 figuring out how to do it. They have actually amended their
5 RPS twice and provided further clarification on how to do that.
6 They have actually set a minimum efficiency requirement at
7 50 percent for the system, which is higher than the average
8 combined bid purchase of electricity and on-site thermal using
9 the boiler average. They have also identified that 20 percent
10 of the CHP systems output needs to be used for thermal. So,
11 again, to try to avoid any PURPA issues from back in the day.
12 And another thing to consider here is whether or not there
13 should be an emission limit tied to any type of combustion
14 technology. Connecticut did go ahead and apply an emission
15 limit in connection with their state air office.

16 The other way to take a look at this is if you didn't
17 want to actually include CHP, what we have been talking to a
18 few states about is recognizing the thermal component because
19 right now any CHP system that is fueled by biomass where
20 biomass is an eligible resource, that's an eligible resource,
21 but you are not getting that thermal component. So we have
22 been talking to a few states about just adding in or taking
23 credit for the thermal component. So that is what this slide
24 does is just talk a little bit about how you could do that.

25 So, moving into talking about energy efficiency here.

1 States are really finding and utilities are finding
2 increasingly that efficiency is really the large impact
3 resource that can be deployed very quickly, and it can provide
4 long-term substantial benefits. There are a variety of ways
5 states are approaching their energy efficiency goals. I have
6 listed a few here. Percent of demand growth, percent of
7 supply, percent of sales. No matter what you're doing, it is
8 important to make sure you have clear evaluation measurement
9 and verification in place so that you are actually making sure
10 you are getting what you think you are getting through a
11 standard like this.

12 And I referenced that ACEEE report that they recently
13 did for Florida, because using the assumptions that are on the
14 slide, they found that could reduce the projected future
15 electric use from the central grid by over 45 percent in
16 Florida in the next 15 years. And efficiency alone could
17 provide over 31 million-kilowatt hour savings, over
18 6,000 megawatts of demand savings.

19 So this is the map that I promised you showing you
20 which states have efficiency components. There is 11. Oregon
21 recently passed their portfolio standards, so they are not
22 colored, but Oregon is there. So there is 11 total. And this
23 is the graph I wanted to show you from North Carolina. I'll
24 talk you through it very briefly. What it shows is the bottom
25 right-hand graph, they did a potential study on what an RPS

1 might look like. The top line is just their renewable
2 criteria, which is the left box in the top, and what that would
3 cost. On the left-hand side is the rate impact, and on the
4 bottom is the year. So it shows that you would hit about 30
5 cents if you just did a strict RPS. If you did an expanded
6 RPS, which included a variety of hydro and expanded wind, it
7 dropped you down. But the point of this whole thing of showing
8 this to you, the bottom line, which shows if you include
9 efficiency, it drops you down to about four cents. So this is
10 an RPS that includes efficiency with tremendous cost savings.

11 The staff had asked to talk a little bit about tiers
12 and multipliers, and I would just like to spend a brief moment
13 saying that since you are using different technology tiers, or
14 vintage tiers, or credit multipliers to try to incentivize
15 specific technologies, I have just included a sampling here on
16 the right-hand side. I went on to say contrary to what Jane
17 had said, I have actually never seen an entire tier given a
18 multiplier. It is usually given for either something generated
19 in-state, such as Colorado, or for solar such as in Arizona. I
20 would just like to make you aware that this is if you do a
21 multiplier the costs are increased, and just be aware of that.

22 And the other important element that states are doing
23 if they include efficiency or CHP, for example, they are
24 putting it in a separate tier so that you are not having
25 efficiency competing with renewables for the same percentage.

1 So they are having a full percentage for renewables, a separate
2 percentage for efficiency or expanded efficiency, and that way
3 everyone is getting their own piece of the pie that is based
4 off of their specific potential.

5 The other question that staff asked was who should be
6 required to meet an EPS. And typically these are applied just
7 to IOUs. However, Hawaii and Wisconsin do require the publics
8 to comply fully with the RPS. A couple of states actually have
9 special provisions for their publics. Colorado automatically
10 assumes that they are in, but they allow them to opt out or to
11 self-certificate; and Washington, which passed their RPS with a
12 ballot initiative, they have a very large amount of their
13 customers served by publics, so they created this interesting
14 caveat that any utility serving over 25,000 customers has to
15 comply, as well as invest in cost-effective energy
16 conservation.

17 Another component I would like to talk about here
18 now, moving into some of the discussions of renewable energy
19 certificates is how an affected utility will actually comply
20 with that. There are essentially two different just general
21 broad ways things happen. Under a regulated market that tends
22 to be a bundled product, say electricity on the REC, and it
23 tends to be done through a utility RFP or a direct bilateral
24 negotiation with oversight by the Commission, in their
25 structured markets it tends to be a much more short-term type

1 situation with a lot more numerous parties being negotiated.
2 But New York has taken a hybrid approach where they are trying
3 to essentially get what you get in a regulated state out of the
4 structured market by using their state energy research and
5 development authority to serve as their procurement agency for
6 the RECs to meet the RPS. So all the money goes through that
7 and they purchase it.

8 So, along those lines, this just shows you that there
9 is essentially three ways that across the country states can
10 meet it. They can own the facility, they can buy the REC
11 independent of the electricity, or they can buy a bundled
12 product, the electricity and the REC. And the second large
13 bullet here is really just saying that having clear accounting
14 methods is very important for setting the stage and making sure
15 that the rules of the game are set out clearly so investors and
16 utilities know what they are supposed to be going for.

17 There has been some discussion this morning of
18 production versus capacity, and, you know, in talking about
19 some of the western utilities, Mid-American is a big proponent
20 of using a capacity requirement particularly because with wind
21 you have to have such a large capacity to get the production
22 that you need. It's just something to be aware of when you
23 think about what you are looking for.

24 The other idea that the RECs -- you have heard it
25 already, I will go quickly -- is that it tends to give you the

1 market-based approach, a lower cost of compliance. You have to
2 really weigh that between your in-state benefit of the jobs,
3 keeping the money in state, versus that lower cost of
4 compliance which would lend you to think of a larger region.
5 There's a few different ways that states have approached that.
6 Hawaii and Iowa are the only two that actually require only
7 in-state projects. There are a handful of others that set it
8 up differently. I can talk more off-line about that. But,
9 generally, there is a variety of either generation or delivery,
10 but no two states tend to do it quite the same way.

11 Then the other element that staff asked to talk about
12 is what a tracking system might look like. And it's generally
13 done using the emissions tracking systems that are in place, so
14 a NEPOOL, a Mid-Atlantic. And the Midwest is actually in the
15 final stages of developing MRECs, and then New Jersey and
16 Wisconsin each have their own tracking system. So that is just
17 something to consider that is generally tied to your
18 certificates is what that is going to look like. As far as if
19 someone generates something, how do you verify that? Does it
20 go into this tracking system, who is the administrator, those
21 are just the type of questions that should be sorted out on the
22 front end.

23 As far as penalties, again, states have really found
24 that having credible noncompliance mechanisms are the way to
25 actually achieve the renewable energy generation or the clean

1 energy generation that they are shooting for. Alternative
2 compliance payments tend to be the way they do it, and really
3 the idea here is not to set up a check cashing method. The
4 idea is to set an ACP high enough so that the utility is
5 actually able to get the generation in the ground or to buy the
6 RECs, not just pay the state into a fund which would then go
7 into renewable energy projects.

8 The other component I would like to mention here are
9 that Montana and Pennsylvania actually have a unique way of
10 treating their ACPs in that they don't allow their rate-setting
11 entity to recover ACPs in rates, and that is a pretty big
12 incentive driver. So if you can recover your investment in the
13 clean energy requirements in your rates, but if you don't hit
14 that, and you have to pay your ACP and you can't recover that,
15 it is a pretty strong driver.

16 Some elements of successful implementation is what
17 you are doing today, really trying to develop broad-based
18 stakeholder support around the idea. Again, coming up with a
19 very clear mix, investors like certainty. So if states keep
20 changing the rules on what an RPS looks like frequently, it
21 tends to not bode well for the price of a REC in a state.
22 Folks really don't feel like if they put their money here that
23 they will actually get their return.

24 An important point here on cost caps is just to try
25 to mitigate or set a cost cap such that it is reasonable if

1 what you are willing to absorb for your customers, but also
2 recognizing that any new generation will cause some sort of
3 impact on rates and just trying to keep that in mind, as well.
4 And, finally, the idea of the enforceable penalty mechanism.

5 Another point that I would be remiss if I left
6 without saying is that states who really start to approach
7 ideas from a portfolio, so that looking at all the different
8 mechanisms that either incent or prohibit increased use of
9 clean energy in your state as a package and trying to really
10 take a look and see where you are at. So, I list these up
11 here, just as things to consider. Looking at the utility
12 throughput incentive, I don't want people to think that
13 automatically means you have to do decoupling. There is a
14 variety of things you can look at.

15 Also, standby rates for distributed generation tend
16 to be a primary barrier to projects going in across the
17 country. Standardized interconnection rules across the state
18 so that a developer is going to get the same treatment no
19 matter where they are in the state. And, finally, working with
20 the air office to create output-based emission limits for DG so
21 they are actually using your efficiency and your on-site system
22 as a pollution prevention measure rather than dumping out a
23 control mechanism. And the other option there is to consider
24 being creative when other options are out there, such as
25 California's loading order.

1 There are resources that MPA has produced. Two of
2 them are in your binder, which is the fact sheet and the white
3 paper on RPSs and EPSs. We also have documents, as I
4 mentioned, coming out of the national action plan for energy
5 efficiency which EPA will facilitate. There are guidebooks on
6 how to conduct a potential study and it geared towards
7 policymakers so when you procure one of the questions you
8 should be asking. A guidebook on evaluation measurement and
9 verification. A guidebook on incorporating efficiency into
10 resource planning, and also a guidebook on aligning utility
11 incentives with the cost-effective delivery of energy
12 efficiency. And those all will be out in the fall.

13 In summary, here is the website where you can get all
14 the information for folks in the audience. There is a lot of
15 opportunities. We commend you all for going down this road,
16 and if there is further assistance that we can provide to you,
17 we will be happy to. Thank you.

18 CHAIRMAN EDGAR: Thank you.

19 Did you say that the EPA resource documents that you
20 have just listed a few moments ago that they would be available
21 in the fall?

22 MS. PIELLI: The ones that I listed verbally. The
23 ones on the site are all available now. The national action
24 documents will all be available in October.

25 CHAIRMAN EDGAR: Okay. Thank you.

1 Let me just ask this question, is EPA supportive of
2 states establishing renewable portfolio standards on their own
3 on a statewide basis?

4 MS. PIELLI: We provide assistance to states to help
5 you all get a feeling of what other folks are doing. We just
6 really want to help you do what is going to be right for your
7 state to lead towards increased efficiency renewables in CHP.

8 CHAIRMAN EDGAR: Thank you.

9 Commissioners, any questions? No questions. All
10 right. Thank you so much. Good information.

11 And our last speaker in this section of the agenda is
12 Mr. Bob McGee with Gulf Power.

13 MR. MCGEE: Thank you, Commissioners.

14 I would like to speak to several issues briefly. The
15 first would be what type of incentives are necessary to
16 encourage compliance with the new renewable portfolio standard.
17 And the first and most important item is to set realistic goals
18 and a realistic timetable.

19 We have heard already from previous presenters that
20 we have got about 1,000 megawatts in the state of Florida. A
21 20 percent goal would be a ten-fold increase in that. And we
22 have also heard that California had a 20 percent goal, and had
23 at the time that they set the 20 percent goal about half of
24 that fulfilled, so they were essentially talking about a
25 two-fold increase in the renewable energy that the state of

1 California did. And, of course, the main example is one where
2 there was no net essential increase there. So I would just
3 encourage us to be careful about how ambitious we are in
4 setting that goal. That would certainly be a disincentive to
5 set it too strongly.

6 Also, we heard from Mr. Keeley from Siemens, and he
7 identified about 800 megawatts of potential renewable energy in
8 the state of Florida, pretty easily for us right there, which
9 really is very closely in line with the 2003 FPSC and DEP
10 combined study, Commissioner Carter, that has previously been
11 done. Those two are pretty closely aligned. Now, certainly
12 there is more out there, but how much more is the big question.

13 Secondly, flexibility in fuel sources would certainly
14 be another consideration including carbon free types of fuel
15 sources. Also, multipliers on renewable energy credits from
16 favored sources would be a tremendous incentive to move those
17 types of renewable generation sources.

18 Another item that I would like to suggest for your
19 consideration is periodic goal setting. I don't know that any
20 other state in the nation does periodic goal setting, and I
21 would submit that Florida does that very well in the
22 conservation docket. And something similar along those lines
23 for renewable energy would take care of a couple of things. It
24 would set, for instance, a fixed megawatt goal out there, for
25 instance, like Texas does in their state, and periodically

1 reviewed every three years. We would understand at that point
2 what the demand and the supply of the market is and be able to
3 adjust accordingly and not drive the price in the renewable
4 market crazy and make it a little bit more cost-effective for
5 customers.

6 I would mention also that the Texas market, which
7 does have a fixed megawatt goal, does allocate based on energy,
8 so it not just a capacity type goal. It's one that I would
9 submit for your consideration in reviewing. Also, of course,
10 full cost-recovery for the utilities, and it potentially an
11 incentive for meeting a goal early would be significant
12 incentives for the utilities to continue to pursue these
13 renewables as we desire them to do.

14 On the next question, should a tradable renewable
15 energy system be set up? Certainly the utilities believe that
16 that would be an appropriate thing to trade renewable energy
17 credits within the state of Florida to be able to bolster that
18 market. Of course, with an emphasis on maintaining the
19 environmental and economic development benefits within the
20 state. If the RPS goal is so large that we wouldn't be able to
21 attain it otherwise, we might need to be accessing renewable
22 energy credits from out of the state. And, of course, that has
23 got the downside of moving dollars out of the state of Florida
24 from our citizens.

25 And lastly, what is the appropriate methodology to

1 track progress toward meeting a renewable portfolio standard?
2 We believe that an FPSC either authorized or run type of system
3 for tracking and monitoring that would be necessary. Something
4 that is independent and will monitor them. Thank you.

5 CHAIRMAN EDGAR: Thank you.

6 Commissioners, we are not as far behind as it may
7 look, I assure you, just a little bit. So I think if we forge
8 ahead? Everybody okay to keep going? Okay.

9 Then we are going to then move into our next section,
10 which is labeled E on the agenda, and we have asked our
11 presenters in this section to talk to us about general
12 concerns, if any, about potential costs, about impacts to
13 business and consumers, and possibly incentives or ways to
14 minimize or mitigate any of those concerns. And so we are
15 going to move right into it and call for my first speaker,
16 which is Gwen Rose.

17 MS. ROSE: Hello, Madam Chairman, Commissioners.
18 Thank you for the opportunity to be here today. I am Gwen
19 Rose, I'm with Vote Solar. We are a nonprofit that focuses
20 specifically on solar energy policies that could jump-start
21 solar markets with the objective of bringing solar into the
22 mainstream. We are really interested in how to create market
23 transformation for solar in order to make it cost-effective.

24 So, here is what I am going to be talking about,
25 concerns, potential impacts, environmental, social, and

1 consumer costs. You have heard a lot today, but defining
2 objectives at the onset of this process is going to be critical
3 as it will largely dictate the targets, the timelines, the
4 implementation of the RPS as well as the role that solar could
5 play. So pointing to Governor Crist's Executive Order 127 as a
6 starting point, since specific objectives appear to be market
7 development and emissions reductions. So, if the RPS is going
8 to be used as a tool to develop solar --

9 CHAIRMAN EDGAR: Ms. Rose, I'm sorry to interrupt. I
10 think that we may be lacking -- does everybody have a copy?
11 Everybody does have a copy. I'm sorry, I thought we were
12 missing some copies of your slides. I wanted to make sure we
13 all have what we needed, but I think we're good? We good,
14 okay. I apologize. Go right ahead.

15 MS. ROSE: Okay. So if the RPS is going to be used
16 as a tool to develop the solar market, then in our experience a
17 carve-out is going to be the most effective mechanism for doing
18 that. And Dick Lowery of Sharp talked about this a little bit
19 earlier, that there are -- you can use a carve out or you can
20 use a multiplier, but I would just argue that if a multiplier
21 doesn't result in additional solar development, then we might
22 not be meeting the objectives that Governor Crist lays out in
23 Executive Order 127, which is to develop a market for
24 renewables with a focus on solar.

25 But the experience in other states does indicate that

1 we can create an RPS with a solar carve-out that balances the
2 objectives with the possible cost impacts to ratepayers. So,
3 just to have something to sort of argue about, I have created a
4 strawman of what a solar program under the renewable portfolio
5 standard might look like. We have heard the number that the
6 solar industry thinks is feasible, which is four percent. And
7 just to clarify, that is basically a two percent carve-out for
8 photovoltaics and then a two percent carve-out for solar
9 thermal technologies.

10 And I also want to make a clarification that I'm
11 really looking at customer sited renewable technologies. Just
12 to co-opt the analogy that Mr. Kise from the Governor's office
13 used, this is sort of like mainframe technology versus PCs.
14 You know, the solar we're looking at would be distributed on
15 customer's rooftops meeting energy on the customer's side of
16 the meter. So what it is really competing with is retail
17 rates, not wholesale rates associated with centralized power.

18 So, just to clarify the rationale for the four
19 percent goal that, you know, the two percent at least for the
20 solar PV is really within the realm of what we have seen in
21 other states. New Jersey has a carve-out for 2.12 percent by
22 2021, Maryland just passed a two percent carve-out for solar
23 which should result in 1500 megawatts by 2022. We also see
24 similar carve-outs for Connecticut and Colorado.

25 The industry might say that it is conservative as far

1 as its ability to ramp up to meet that sort of a goal, and it
2 also, I think, falls within ACEEE's estimates for what could be
3 done under an RPS with photovoltaics, and then they also
4 estimate on-site renewables.

5 So, this is structured to start out as a requirement
6 on total sales. You start out very small, something like here
7 we are looking at, you know, three-thousandths of a percent of
8 total sales, ramp up very slowly in the early years to give the
9 program time to develop, and then as systems costs would
10 decline, you know, through greater demand and the maturing
11 industry, then the solar requirements would increase in the
12 later years until you reached that goal by 2020.

13 So then the question is how would you design a
14 program and what would it cost. And I think of paramount
15 importance, the programs need to be designed to meet a few
16 objectives; that they simulate demand, that they keep costs as
17 low as possible, and that they drive the solar industry towards
18 self-sufficiency so that it can continue on without state
19 intervention at the end of the program.

20 The way to get there, what we found -- and this is
21 based on models for what has worked in Japan and it is being
22 developed or implemented in California, and in now Maryland, is
23 to get there by offering a stable, secure funding source for
24 continuous period of the RPS, and then decline those incentives
25 over time. For example, continuously from 2008 to 2020. Half

1 of the installed costs of solar in the U.S. come from local
2 costs associated with marketing, sales, design, construction.
3 So, you know, while global markets are going to help decline
4 material costs, local markets that are mature are going to help
5 decline that other portion which represents 50 percent of the
6 total costs. So you need to build local solar infrastructure
7 in Florida.

8 Actually, let me go back here. So in figuring out
9 the cost of the program, first we need to figure out what the
10 relative incentive would need to be to drive demand for each
11 particular customer class, so that is what the lines on the
12 graph represent. Just for example, the green line at the
13 bottom represents the incentive level that would be needed in
14 any given year to incentivize large commercial customers to
15 invest in solar. And this basically is modeled to create an
16 internal rate of return for the individual customer at eight
17 percent. So it takes into account the material costs, the
18 installation costs, it assumes two percent escalation in
19 electricity prices, and the availability of the federal tax
20 credit, the value of electricity savings, and then how those
21 inputs would assume to be changed over time, over the period of
22 the RPS. And that then applies to the small commercial, which
23 would need a slightly higher incentive than the residential,
24 which would also need a somewhat higher incentive.

25 So this is, again, just a model of the PV portion of

1 the program. That is what I'm really focussing on right now.
2 Solar thermal is just about cost-effective at this point. But,
3 I assume that the model for solar thermal would look fairly
4 similar under an RPS.

5 So from there, depending on how you design the
6 incentives, you can model what the costs would be. To build a
7 robust and healthy solar market, you would offer incentives to
8 homes differently than you would offer incentives to large
9 commercial versus small commercial. So this graph is just
10 developing more on what the incentives might look like to large
11 commercial systems. This is very similar to the model that
12 Maryland has just passed in their new revised renewable
13 portfolio standard. Large systems would receive revenue from
14 the sale of renewable energy credits which utilities would
15 purchase through long-term 15-year contracts, and then that
16 contract would set against the value of the RECs declining over
17 that period of 15 years.

18 And then you would also structure it so that in any
19 given year there is a declining starting incentive level. In
20 other words, products installed in year one would get, you
21 know, 47 cents per kilowatt hour and then declining, and then
22 in year two projects installed would start at, you know, 42
23 cents per kilowatt hour and then decline from there. So each
24 year you would also see the starting incentive level decline.
25 Hopefully that's clear. Basically, a two-tiered declining

1 incentive structure. And this is really important, you know,
2 from the standpoint of making sure there is a firm revenue
3 stream to make projects financeable, but also keeping costs low
4 which facilitates a sustained orderly development of the solar
5 market.

6 And then just to mention incentives for small
7 commercial and residential systems, in order to build that side
8 of the market you really want to be able to provide upfront
9 incentives similar to what is in operation through the DEP
10 today. And there are a few methods that states have used to
11 fund these types of programs. In New Jersey and in Colorado
12 they have a combination of an upfront rebate funded through a
13 systems benefit charge and sale of renewable energy credits.
14 If that is not an attractive way of going about it, the way
15 Maryland is going to be doing it is by having SRECs purchased
16 as a single upfront payment, but estimated for the full life
17 time production of the system. So it's money that would have
18 been spent over that period of time, but they are just doing it
19 at present value and adding it up and giving it as a one lump
20 sum payment.

21 And then the next couple of slides go over the
22 economics to an individual customer, so you can see some of the
23 assumptions that are being made as far as capital cost,
24 declining structure of the rebate and tax assumptions, but
25 basically it was set to make project economics be at least

1 eight percent internal rate of return which is what business
2 customers typically need at least to invest in solar.

3 For residential cost, the blue portion of the columns
4 represents the cost of the utility. And as you can see in the
5 residential case, the incentives would also be structured to
6 decline over time, so that as the years go on, the value of the
7 electricity and the tax credits represent the majority of the
8 portion of the cost for solar.

9 So to describe what the rate impact would look like
10 of this, basically we're just taking the total funding of the
11 program from 2008 through 2035, since projects installed in
12 2020 would get incentives for 15 years, and then divided that
13 by total megawatt hour sales. And what you end up with -- and
14 just to mention the high estimate, this was assuming a one
15 percent revenue cap for the total solar program. So the solar
16 program would never be allowed to go above one percent, which I
17 have heard some people quote today, and that is actually what
18 Maryland is using for their solar portion of the RPS, as well.

19 And this is just an estimate, obviously. This is,
20 you know, one analysis. It takes into account, you know,
21 electricity prices, it makes some assumptions about what solar
22 costs are going to do over time, and it could use some
23 sensitivity analysis and some additional scenarios, but I think
24 it is important to look at this in the right frame because
25 based on current resource mix, solar and other renewables may

1 appear expensive, particularly if they are only examined
2 through traditional cost-effectiveness tests rather than also
3 including resource costs and societal costs. But more
4 importantly, it's clear that all states are starting to face
5 similarly high costs for new generation. Since 2000 world oil
6 prices doubled, and natural gas prices have tripled, spot
7 market prices for coal have doubled. And so if we're looking
8 at this from the consideration of future energy resource mix, I
9 think that solar energy efficiency starts to look very
10 attractive.

11 So to refer to what has been experienced in terms of
12 solar costs in other states. A lot of people have referred to
13 Reinhauser's (phonetic) study from the Lawrence Berkley
14 National Lab. He did one study where he reviewed 28 studies
15 that were done to model costs of an RPS. I think this has
16 already been mentioned. Let's see. But when he went and
17 reviewed actual costs associated with RPS where the RECs or the
18 surcharge just sets the above-market costs, the rate impacts
19 were estimated to be pretty minimal: Maine, .1 percent;
20 Maryland, .1 percent; California, .3 percent; New Jersey,
21 .1 percent; and then Massachusetts at the top where they are
22 primarily relying on short-term renewable energy credit
23 contracts.

24 So just to break that out in terms of the solar
25 provisions and what two of the largest markets in the U.S. for

1 solar are seeing, New Jersey and California, and I mentioned
2 New Jersey has a specific solar carve-out, their current
3 estimate of rate impacts is about \$16 a year for residential,
4 and \$130 a year for commercial. And then California, while
5 they didn't have solar as part of their renewable portfolio
6 standard, they do have a goal to get to 3,000 megawatts by
7 2017, and they estimate the rate impact to be \$14 per year
8 for residential.

9 Just to mention a couple of benefits from solar. It
10 does have capacity value. If you were to install -- if you
11 were to meet a two percent photovoltaic target by 2020, that
12 would be equivalent to about 4 gigawatts of solar, and what
13 that essentially corresponds to is about 1,700 megawatts of
14 firm dispatchable capacity, and it's equivalent to about 26
15 peaker plants. In a few studies that have been done to
16 estimate the value to the utility that solar provides in terms
17 of peak power purchases, transmission and distribution
18 benefits, the value has been estimated at 23 and 25 cents a
19 kilowatt hour in California and 96 cents a kilowatt hour in New
20 York.

21 Just to show that solar does really have value, here
22 is a graph from the Sacramento Municipal Utility District.
23 This is data that they collected for a project for solar on new
24 homes where they compared some efficient homes without solar to
25 some zero energy homes with solar, and then they mapped that

1 along with their system peak demands. This is utility data and
2 it shows that solar does help reduce peak demand. You can see
3 the peak for the nonzero energy home at 2-1/2 kilowatts, and
4 then have your energy efficient solar powered home at
5 1.3 kilowatts. So that's a firm capacity reduction or a peak
6 demand reduction that they can count on.

7 Just to mention customer-sited solar can leverage
8 private money. This is a graph showing installations in
9 California from 1998 to 2006. Public money spent on solar was
10 about \$544 million. What was leveraged in private funds was
11 upwards of \$700 million a year, so you have a total investment
12 of \$13 million (sic). And just to hit on that point, I got a
13 call yesterday from an analyst at Piper Jaffray asking me what
14 I thought the solar market in Florida was going to do because
15 all the guys at Wall Street were looking here and trying to
16 figure out what they should be doing and how to incorporate
17 potential solar markets into their analysis.

18 In terms of emissions benefits of this size of a
19 solar carve-out for a two percent solar PV goal, if you
20 estimate the emissions over the lifetime of the project, it's
21 63 million tons of CO₂, 203,000 tons of SO_x emissions, and
22 109,000 tons of NO_x emissions. And then solar thermal where we
23 assume the life of the system is 20 years, we estimate
24 49 million tons of CO₂ reduction.

25 And then economic development benefits. I know that

1 Dick Lowery from Sharp talked a bit about how solar creates
2 high-tech quality jobs. Vote Solar actually commissioned a
3 study that just looked at a number of different models that
4 were out there for looking at job benefits for solar, and we
5 found that the average was 13 direct job years per megawatt for
6 in-state jobs, and then it was 20 manufacturing job years.

7 But industry estimates show that for residential
8 systems you get ten job years per megawatt, small commercial
9 you get nine job years per megawatt, and for large commercial
10 you get seven job years per megawatt. So the benefit of a two
11 percent goal in terms of local in-state jobs would be about
12 31,600 job years if you use industry estimates; and if you use
13 ours, it's upward of 50,000. And then solar thermal, the
14 estimates are that one job year is created for every 50 systems
15 installed, so the benefit of a two percent solar thermal goal
16 would be around 32,800 job years.

17 We have heard these poll numbers already from Mason
18 Dixon, but what I wanted to highlight here was just that there
19 has really seemed to be change in public support for solar. We
20 did a poll in California in 2005 that asked basically the same
21 questions, which is do you think the legislature should support
22 investment, would you be willing to pay. And in California it
23 was 77 percent versus 90 percent in Florida, and then willing
24 to pay was 58 percent versus 78 percent in Florida. And I
25 don't think that Florida is necessarily more or less green than

1 California, I think it just represents the fact that there has
2 been a shift in perception about renewable energy and our need
3 to develop it here. And I will go ahead and wrap up right
4 there.

5 Thank you. Do you have any questions?

6 CHAIRMAN EDGAR: Thank you.

7 Commissioner Carter.

8 COMMISSIONER CARTER: Thank you, Madam Chair.

9 In your analysis of where people were in terms of
10 supporting this, was there a question asked about how much
11 would they be willing to pay for it?

12 MS. ROSE: That was a question, would you be willing
13 to pay, how much would you be willing to pay, and then I think
14 it structured it as, you know, zero to 25 cents, 25 to 50,
15 50 to 75 cents, and then upwards. What is interesting is that
16 the same study, and I didn't include the numbers here, was done
17 in Arizona, but actually a more detailed study, and people in
18 Arizona were willing to pay \$15 a month for clean energy. And
19 I could get those numbers a little bit more, but that was a
20 fairly rigorous study that was done in Arizona to estimate the
21 willingness to pay for solar programs.

22 COMMISSIONER CARTER: Can you put your slide back up?

23 MS. ROSE: Yes. This one?

24 COMMISSIONER CARTER: Yes. Are you saying that
25 90 percent of the voters said that the legislature should

1 support investment in solar, or are they paying that it should
2 be paid by the general body of taxpayers, or the general body
3 of ratepayers?

4 MS. ROSE: It didn't get to that level of detail. It
5 was just a general -- 90 percent thought the legislature should
6 support investment, and then 78 percent were willing to pay on
7 their utility bills. That was the way the question was
8 structured, would you be willing to pay if it was on your
9 utility bill, and how much.

10 COMMISSIONER CARTER: Thank you, Madam Chair.

11 CHAIRMAN EDGAR: Staff, there are some slides that
12 Ms. Rose used that we don't have a copy of, so if you could be
13 sure to distribute those to each of the Commissioner's offices,
14 I know that that would be helpful to us.

15 Commissioner Skop, did you have a question?

16 COMMISSIONER SKOP: Yes, Madam Chair. Thank you.

17 I have two quick questions in the interest of time.
18 There was a slide, and I apologize because I don't have the
19 slides before me, so I'm trying to pay attention on the screen.
20 But you had one slide that discussed Maryland's incentives in
21 kilowatt hours. I think it's further back. That one.

22 MS. ROSE: Uh-huh.

23 COMMISSIONER SKOP: Am I correct to understand that
24 there is basically -- I think that was the TRECs, or the RECs
25 that you are talking about that in year one it was an incentive

1 of approximately \$500 per megawatt hour.

2 MS. ROSE: Yes, and that really represents the ACP,
3 what would be the ACP. So that is the maximum that you could
4 pay. So you could actually negotiate lower cost for the
5 renewable energy credits, but that's how we modeled it.

6 COMMISSIONER SKOP: So in that case, I mean,
7 certainly if it were at that price premium, Florida would want
8 to be a net producer of RECs as opposed to a net contributor to
9 RECs, would that be correct? If that price point could be
10 sustained at \$500 per megawatt hour of a subsidy, certainly I
11 would want to sell as opposed to buy.

12 MS. ROSE: I'm sorry, the way this is structured, and
13 here it's represented as a capacity-based incentive, but,
14 again, the way it is structured is just to try and create
15 individual customer economics that you reach a favorable
16 interim rate of return, and this is what we find would
17 stimulate that level of investment. Again, you drop that over
18 time so that it goes down to essentially zero at the end of the
19 period at which point you assume the industry is able to
20 function without incentives.

21 COMMISSIONER SKOP: Well, still at the end of that
22 period it is approximately \$100 per megawatt hour of incentives
23 15 years out, if I'm correct, which is significantly higher
24 than the cost of natural gas generation today.

25 MS. ROSE: Right. But, again, what we are trying to

1 do is reach grid parity, we are not trying to compare costs of
2 solar with wholesale power costs.

3 COMMISSIONER SKOP: Okay. And, secondly, in brevity,
4 you mentioned capacity payments for distributed solar. That's
5 somewhat of a foreign concept to me. Can you explain if there
6 are any distributed capacity payments or solar currently in
7 place?

8 MS. ROSE: I think I might have miscommunicated. I'm
9 just talking about an incentive that's paid up front based on
10 the capacity of the system, not a capacity credit that the
11 utility applies if that was your question.

12 COMMISSIONER SKOP: Thank you.

13 CHAIRMAN EDGAR: Thank you, Ms. Rose.

14 And the next speaker is Michael -- no, I'm sorry, I'm
15 out of order. I apologize. Kim Owens with JEA. Welcome.

16 MS. OWENS: Thank you. Thanks for the opportunity to
17 speak to you today about the RPS and the impact of the RPS on
18 JEA's customers.

19 I'm going to be present an overview of the
20 affordability rate cap first introduced by Barry Moline earlier
21 today, and I will explain some of the national practices in RPS
22 design and go over the impact of this to JEA.

23 The greatest uncertainty of an RPS is certainly
24 whether these goals can be achieved with minimal impact to our
25 customers. In the FMA proposal we mentioned the affordability

1 rate cap as a way to protect consumers from the uncertain costs
2 of renewables. This cap would allow for compliance either
3 through energy or investment goals. We have referred many
4 times to this particular table, and this is the first time you
5 have seen this chart. This is the Lawrence Berkeley National
6 Lab review of the 28 studies, I think it was 26 states, that
7 have been done since 1998 that show that there is about, on
8 average, less than one percent impact of an RPS on residential
9 or customer rates.

10 Now, this is just a potential study, it's not the
11 actual results. But if you dig into this study a little bit
12 more you can look at the predicted technologies that they used
13 for this study and the majority of them are wind. There is
14 also some variability in the assumptions that they make
15 throughout this study as far as natural gas prices,
16 regulations, and production tax credits. So this particular
17 study and the conclusions drawn from it as far as less than one
18 percent should be taken a little bit with caution because we
19 haven't done one yet for Florida.

20 Several states incorporate cost controls into their
21 RPS. We talked about a couple of them today; a rate cap,
22 contract pricing rate caps, alternative compliance payments and
23 penalties. Three of the states actually have rate caps,
24 Colorado and New Mexico have a rate cap in terms of percent
25 retail rate, and Washington has a percent of revenue. I

1 actually talked to the regulators from Colorado and Washington.
2 It was interesting that Colorado is struggling with how to
3 define their percent of rate. If they had to do it all over
4 again they would have done it as a percent of revenue. I think
5 they thought it was an easier basis to define what the
6 operating electric revenues were rather than the rates, so that
7 is just a point.

8 Also, I have the contact information from each of
9 these three public utility commissions that I will forward on,
10 because many of them are going through exactly what you have
11 gone through. Another point is that Colorado and Washington
12 were both citizen initiatives, they were passed through ballot
13 initiatives.

14 As previously stated, you can define the cost cap in
15 terms of percent revenues or percent retail rate, and then you
16 also have to define what counts as your costs. You can look
17 at -- for renewable energy, it's a little bit easier, you can
18 look at your renewable costs, your marginal costs over -- the
19 renewable energy resource over the base costs that you would
20 have done anyway.

21 For energy efficiency, it is a little bit more
22 complicated. You might look at the program costs to roll the
23 energy efficiency program out and also include lost revenues on
24 debt service and base operating costs if capacity isn't
25 deferred.

1 So what would something like this mean to JEA? At
2 JEA's revenue of \$1 billion in sales of 14 million-megawatt
3 hours a year, a one percent rate increase or one percent of
4 revenues, which is \$10 million for our customers would be about
5 a dollar a month. And you hear this a lot, a penny on a
6 dollar, a dollar a month, is that something that our customers
7 can absorb. And although a dollar a month doesn't sound like a
8 lot, a one percent rate increase is just pancaked on top of the
9 other rate increases that our customers are already absorbing.

10 In October, our customers for the first time in 14
11 years will experience a base rate increase of 6.25 percent. On
12 top of that an environmental surcharge that we have had to add
13 on for environmental remediation issues. An average customer
14 at 1,000 kilowatt hours per month is already paying almost \$8 a
15 month, and then that customer will then over the next several
16 years experience similar type of rate increases as we seek to
17 levelize our costs of service, deal with costs of new
18 generation, and also costs of new regulation. So this dollar a
19 month isn't just added that would be there for RPS compliance,
20 it's added on top of other rate increases, and I'm sure that
21 other utilities' customers are experiencing the same things as
22 costs go up.

23 But if we decide that one percent is reasonable, what
24 does one percent purchase? If JEA spends -- and this is really
25 a high level example just using biomass as an example. If we

1 spent \$10 million of our revenue in one particular year and we
2 purchased under a power purchase agreement a biomass project
3 with an 80 percent capacity factor, at about \$65 a megawatt
4 hour, about 40 percent of the time that facility is operating
5 it would be displacing \$30 a megawatt hour power, so we would
6 be paying more for it. At \$65 a megawatt hour during our own
7 peak, it would be about the same.

8 So, you know, kind of calculating it out, we could
9 purchase maybe a 100-megawatt project over the next 20 to
10 30 years. And that is actually a decent project. That's about
11 5 percent of our sales if you look at its production output.
12 So, just looking at that, a \$10 million investment could
13 produce, or a one percent revenue investment could produce a
14 100 megawatt facility, or five percent of retail sales. Which
15 is pretty aggressive, and it's something that JEA is certainly
16 looking at. But if you start thinking about the 20 percent
17 just from renewables, that then ends up being a three or
18 four percent increase on expenditures over that one percent
19 that's used in this calculation.

20 And then percent of energy efficiency, just as an
21 example, JEA is rolling out a very aggressive demand-side
22 management energy efficiency program in FY '08. We spent the
23 past two years trying to figure out how best to use our
24 automatic meter reading program to best serve our customers and
25 reduce load. And as an example, we will be spending

1 \$13 million over three years, or roughly about \$4 million a
2 year, and this increases as the years go on. But just as an
3 example, at the end of three years we will see about
4 40 megawatts of demand reduction and about 60,000-megawatt
5 hours reduced. Now, most was those are focused on demand
6 projects, not necessarily energy focused, because demand is
7 where we reduce our cost of new generation.

8 And, finally, JEA has been committed to developing
9 renewables since 1999. I have been with JEA for five years
10 trying to make our renewable energy program work. We have
11 developed 400,000-megawatt hours towards our renewable
12 commitment, which is more of a self-imposed defined program,
13 which is about three percent of our sales. Now, 50 percent of
14 that is from a power plant efficiency project that we did.

15 We have developed biogas landfill gas projects, we
16 have some wind that we invest in in Nebraska, we have a solar
17 incentive program and have invested in solar PV and solar
18 thermal, and then we have had some efficiency projects that we
19 have done throughout our system. We have worked on this pretty
20 aggressively. We have had one biomass project over the past
21 five years that has not performed. That was a 70-megawatt
22 project. And last week we were sad to report that we had to
23 cease negotiations with the 13-megawatt biomass project up
24 there, because after three years of negotiations we couldn't --
25 well, they couldn't make the project work although we were very

1 close in the power purchase agreement.

2 So we have had a lot of struggles. Certainly even as
3 we move forward trying to reach even the 100-megawatt goal
4 there is going to be a lot of barriers that are going to have
5 to be overcome, but there has been a lot of lessons learned, as
6 well. Our process moving forward is to finish our biomass
7 request for proposals which should go out in the next couple of
8 weeks. We have gotten a lot of good response from that on
9 biomass projects. We do have a very aggressive demand-side
10 management energy efficiency program that we're launching, and
11 we're looking at some new technologies using biodiesel instead
12 of diesel fuel in our combustion turbines.

13 We are doing a test with the University of Florida.
14 We are looking at a 100-kilowatt hydroturbine test using tidal
15 energy at the Intercoastal Waterway in Jacksonville. And we
16 have got a University of North Florida study looking at solar
17 thermal systems and their potential impact on winter peak
18 reductions.

19 So that kind of explains where we are at. We look
20 forward to working with the Commissioners and their staff as we
21 move forward with developing renewables for Florida.

22 CHAIRMAN EDGAR: Ms. Owens, thank you so much. Great
23 information. And we do want to hear more another time about,
24 in more detail, some of those lessons learned. But right now
25 Commissioner Carter has a question.

1 COMMISSIONER CARTER: Thank you very much, Madam
2 Chairman.

3 Ms. Owens, good afternoon. You drew me back to
4 Mr. Moline's perspective this morning in that with the one
5 percent in the context of the industry, \$200 million would be a
6 substantial investment in terms of creating a marketplace
7 where -- you know, I noticed that you said that one of the
8 biomass plants that you had kind of -- pardon the pun -- went
9 up in smoke. But wouldn't that be a significant amount of
10 resources to energize a marketplace where maybe they could
11 bring on-line new technologies, new efficiencies, and things of
12 that nature?

13 MS. OWENS: It certainly will get things started,
14 yes. But, the problem that we have is -- I think we have the
15 potential certainly from our RFP process, that we have the
16 potential to see 50 megawatt and 100 megawatt projects. They
17 do take three or four years to start even if we can get the
18 fuel. But one of the problems that we have is dealing with the
19 reliability and the potential for those projects to even exist.

20 I mean, a 13-megawatt project did not have that much
21 detriment to our site plan, but the 70-megawatt project did,
22 because as we plan for these projects and they get larger,
23 especially in JEA's portfolio where we're just a 3,000-megawatt
24 utility, the risk of nonperformance and the risk of reliability
25 should they start operating and -- stop operating is pretty

1 high. So we have that to kind of consider as we move forward.
2 But we are definitely moving forward and we are willing to risk
3 that additional amount of money to do that.

4 COMMISSIONER CARTER: Commissioner, a follow-up.

5 CHAIRMAN EDGAR: Uh-huh.

6 COMMISSIONER CARTER: In the context of your earlier
7 version of your RFPs for renewables, what has been the
8 difference in that? And I think you're in the middle of one
9 now.

10 MS. OWENS: We are in the middle of our second.

11 COMMISSIONER CARTER: Your second one. Did you get
12 an increase in the amount of applicants in the second round?

13 MS. OWENS: We got actually about the same, but the
14 amount of -- the number of responses were the same, the quality
15 of responses was higher, and the percentage of biomass only
16 50-megawatt projects was also higher. Bigger projects, not
17 necessarily established technologies, but they weren't kind of
18 pie in the sky. I believe that a lot of them were projects
19 that would actually come to fruition where three or four years
20 ago we weren't necessarily at that spot.

21 COMMISSIONER CARTER: Thank you, Madam Chair.

22 CHAIRMAN EDGAR: Thank you.

23 Commissioner Skop.

24 COMMISSIONER SKOP: Thank you, Madam Chair.

25 Could you briefly speak, I guess, on that slide to

1 the wind efforts and what you are doing in regard to that?

2 MS. OWENS: Well, our wind effort actually is with a
3 partner utility with Nebraska Public Power District. We wanted
4 experience in working with a wind project, so we actually have
5 a capacity energy relationship with NPPD, because we couldn't
6 build a wind farm here in Florida, so we wanted to partner with
7 an entity that could, and they needed our support, as well. So
8 that's kind of really how that would be structured.

9 Our reliable energy commitment is with our
10 environmental community, and they, you know, definitely are
11 interested in seeing renewables being developed in Florida, so
12 there was really kind of an extent to which they would allow us
13 to continue to support wind that was outside of our community.
14 So that was kind of a test project, I guess.

15 COMMISSIONER SKOP: A follow-up, Madam Chair.

16 As a result of those lessons learned or that
17 experience gained, is there any future plans to look at doing
18 wind within JEA's service territory given its proximity to the
19 coast?

20 MS. OWENS: Actually for several years we have been
21 advocating for the states to partner on doing a wind resource
22 study. We have put a considerable amount of money over the
23 past several years into research and development in one form or
24 the other, but it comes out of our operating budget, and we
25 tend to not be the best research entity. And so what we were

1 trying to do is partner on a wind study to look at our offshore
2 wind resources. We do have some preliminary data to see what
3 we have, but you need to kind of get those tools. Once you get
4 those tools in place to see what type of wind resources we
5 might have, then we can start entertaining developers because
6 we have got a tool to be able to tell them where the potential
7 wind is.

8 We have had conversations with Georgia Tech over wind
9 resource studies, as well. In fact, that was what I was
10 alluding to you earlier, I'm going to forward you what we have
11 so far, but it just requires a certain amount of investment
12 that we haven't done yet. We would like to see some
13 partnership on that.

14 COMMISSIONER SKOP: Thank you.

15 CHAIRMAN EDGAR: Thank you.

16 And now I would like to ask Mr. Bob Dobson to come
17 forward.

18 MR. DOBSON: Thank you, Madam Chair and
19 Commissioners, for giving me the opportunity to chat with you
20 briefly today.

21 My name is Michael Dobson, and I represent the
22 Florida Renewable Energy Producers Association. And the
23 Florida Renewable Energy Producers Association, we represent
24 renewable energy producers interested in project development in
25 the state of Florida. FREPA is our acronym. Our main goal is

1 to advocate for policy and fiscal incentives and favorable
2 regulatory environment and programs that promote research and
3 spur growth in the use of renewable energy sources in the
4 sunshine state.

5 In our minds, RPS equal economic growth and a cleaner
6 environment for Florida. Renewable energy generated from the
7 sun and biomass can supply a greater portion of Florida's
8 energy needs while improving our environment and increasing
9 fuel diversity and spurring economic development. And many
10 experts will concur that renewable energy portfolio standards
11 is a very useful tool so we can accomplish that goal. RPS, in
12 our judgment, is very cost-effective. It is a very
13 market-based policy when used properly, and currently 23 states
14 and the District of Columbia have enacted renewable energy
15 portfolio standards.

16 And here is that infamous map. However, ours is a
17 little different. I think this is the seventh time, but, you
18 know, when I look at this map, it tells a story to me, and it
19 tells a story to many developers throughout the country. And
20 what the story is is that Florida has a closed-for-business
21 sign on it, and that is the view that the developers have, and
22 thankfully we are here today and we are going to hopefully
23 change that view.

24 And there are concerns about RPS, and one of them I
25 think you were just talking about, and that was that ratepayers

1 may see an increase in their monthly bills. And I do concur
2 with Barry Moline who was speaking earlier that all the
3 resources that I have seen indicates that that is about one
4 percent, you know, give or take, and we are talking about
5 \$200 million. But what I would suggest to you is that it's
6 remarkable that it is only one percent, when you consider the
7 investment or the lack of investment in subsidies that
8 renewable energy developers have had federally and in various
9 states throughout the years.

10 For example, the Department of Energy invested in R&D
11 and state incentives have reduced the cost of renewable energy
12 generation as much as 80 to 90 percent over the years. But
13 renewable energy technology still do not compete on a level
14 playing field. The playing field is simply not level. Federal
15 subsidies for renewable energies have been and continue to be
16 much less than government subsidies for fossil fuel and the
17 nuclear power industry.

18 A study by the Renewable Energy Policy Project showed
19 that between 1943 and 1999, the nuclear industry received
20 \$145 billion in federal subsidies versus 4.4 billion for solar
21 energy and 1.3 billion for wind energy. Another study by the
22 Nonpartisan Congressional Joint Committee -- and, I'm sorry, I
23 didn't put this on the slide, but another study by the
24 Nonpartisan Congressional Joint Committee on Taxation projected
25 that the oil and gas industries will receive an estimated

1 \$11 billion in tax breaks in the loopholes that subsidize
2 exploration and production activities between 1993 and 2003.
3 National energy legislation passed by the House and Senate
4 conference committee in November of 2003, HR-6, would authorize
5 more than \$13 billion over ten years in new and expanded tax
6 incentives for oil, coal, gas, and nuclear power industries.

7 So my point is that it is rather remarkable, in my
8 judgment, that while we are talking about one percent, the
9 playing field is certainly not level. And one of the other
10 concerns is the standards will be impossible to reach because
11 there is not enough resources in the state, and there is not
12 enough renewable energy activity.

13 And we say it's a mandate. No one likes mandates.
14 And, frankly, I don't like mandates, but I am coming to the
15 conclusion that given our history in our state as it relates to
16 renewables and given our culture as it relates to relationships
17 between developers and the utilities, a mandate may be the only
18 way we will get there.

19 And then what we talk about is whether or not the
20 percentages are right, whether or not we are talking about the
21 correct number of years out, and all the other kind of
22 devil-in-the-detail things that you guys are going to have the
23 pleasure of getting to. And the issue regarding having enough
24 resources in the state, I do concur with a lot of the previous
25 discussions and that is regarding our need to have what I call

1 a renewable energy resource map, you know, because we have a
2 good idea of what we can do in Florida. We are great at solar,
3 biomass, we are super at biomass in the southeast, we have a
4 lot of wood in Florida and Georgia. But for investor purposes
5 and for our own knowledge to know where we are going and how
6 best to get there, we probably need to find out exactly how
7 much resources do we have going out 10 to 20 years, et cetera.
8 But I don't believe that not having that today is a reason to
9 stop and not move forward.

10 And there are questions. The Governor's executive
11 order proposes an RPS standard of 20 percent by 2020, and the
12 questions are out there can Florida meet such a goal. And,
13 again, that is going to be one of those devil-in-the-details
14 things, but what I would suggest to you is that today we are at
15 2.5 percent on average of renewables. And we have the
16 resources. We don't have a lot of renewable energy developers
17 in Florida today. What I would suggest is that a lot of the
18 more sophisticated developers are going to probably come from
19 out of the state, and also we are going to grow the industry
20 here with the developers who have been working very hard over
21 the years trying to figure things out in what at times has been
22 a very difficult environment.

23 So, I mean, we talk about whether or not we can get
24 20 percent. I believe that we can, but it's a matter of trying
25 to figure out our resources and trying to figure out how long

1 it's going to take us to get there. And I do believe that we
2 need to have, you know, that carrot out there so that we can
3 reach that goal. Because what I will tell you is that when you
4 look back at that map, those states that do have RPS, they are
5 producing more than 2.5 percent. I can share that with you for
6 certain.

7 And I'm going to kind of skip over those two because
8 we talked about the issue regarding resources. And what is
9 Florida's track record in renewable energy projects? It's not
10 very good for a variety of reasons. What I have been told by
11 some developers is that they feel that the utilities are
12 somewhat intimidated by developers. There is not a
13 relationship that has developed over the years. There are a
14 lot of -- developing renewable energy projects are difficult
15 and we need to have good relationships with the utilities to
16 make a lot of those projects come to fruition. And what we are
17 working on now is building on those relationships, and I think
18 an RPS will help us get there.

19 And what we will need to change in the regulatory
20 environment and business attitudes that will make Florida an
21 attractive place for renewable energy development? I think the
22 first thing is to, of course, have an RPS and to come up with
23 some incentives that's going to help developers with the
24 economics, and also it is going to help the utilities, you
25 know, because at the end the day, you know, as much as we would

1 like to think of it as feel-good things, and a lot of it is,
2 these are business deals. The economics have to work. You
3 know, there can't be any losers, certainly not the ratepayers.

4 I don't think a utility is going to sign up a
5 purchased power agreement that's not a good deal. So it's
6 going to require some negotiations and it's going to require
7 some incentives and just an environment of cooperation between
8 all the parties.

9 And the future is now. You know, while we have been
10 talking about this subject for quite some time, and, in fact, I
11 was talking with a gentleman earlier and he said, well, we
12 talked about this in the '70s. And I remember when I lived in
13 California in the '80s we talked about solar and about the
14 future, but what I can tell you is that the future is certainly
15 now.

16 Florida is ripe for solar energy. We have a robust
17 agricultural community. We can do a lot of biomass here. And
18 what we need, frankly, is the will and the leadership of our
19 policymakers and leaders to make those things happen.

20 And I have just got a couple of maps here, and this
21 is one that is fairly simple, and I think it's very instructive
22 in that what you see when it gets to Florida, you are going to
23 see a lot of yellow and green, and we don't have the other
24 color. I can't see it on my -- I'm looking at a -- is it blue?
25 Is that wind? We don't have that, and I think someone

1 mentioned geothermal, and we certainly don't have that. So at
2 the end of the day, regardless of how many resources or what
3 those resources in terms of the capacity, it's fairly clear to
4 me by looking at this particular map, you know, that we are a
5 state of solar and biomass.

6 And this map here, although it is a couple of years
7 old, I would suggest that it probably hasn't changed very much.
8 I think it still holds true that we currently generate mostly
9 biomass in terms of our renewable projects. Florida don't have
10 any large scale solar projects, which is, you know, some people
11 may think is a little bizarre, but it is true, we don't have
12 any large scale solar projects, and we can. I think if we
13 build on those relationships, you know, with the utilities and
14 get some developers that are pretty sophisticated in putting
15 those type of deals together, I think we can have some large
16 scale solar projects here.

17 And this map just kind of undergirds what I have
18 talked about regarding solar, because what you'll see I think
19 in 4 and 5 on your right, I think that color is a green, and I
20 think it shows you where Florida is in terms of our solar
21 radiation per month. We certainly are a solar state, and when
22 you look at some of those states that are producing -- well,
23 they are developing more solar projects than Florida, many of
24 those states share that color.

25 And this next slide, I'll admit, is a little

1 redundant because we talked about our agricultural community
2 and the fact that we are certainly ripe for large scale solar
3 projects.

4 I want to talk about the key elements of a successful
5 RPS program in Florida based on conversations I've had with
6 some developers. We do, in fact, need to identify feedstocks
7 and resources that can generate power today. We need to obtain
8 an up-to-date and usable catalog of available feedstock
9 resources. Those things are important. We need to develop
10 incentives geared toward helping developers with the economics
11 of a renewable energy project, because when we do that, the
12 market -- I think we could have a market driven renewable
13 energy industry in Florida if we kind of set the table right
14 with the correct policies and incentives.

15 We need to make sure that the incentives are
16 long-term and consistent from year-to-year to secure investor
17 interest in the state of Florida. We need to put more focus
18 and investment into proven technologies. There are
19 technologies that are ready today, and I know it's exciting to
20 talk about the things that makes us curious and they are not
21 quite there yet, but there are things that are here today that
22 we could certainly invest in and we can make sure that there
23 are projects that are on the ground and operating.

24 We need to promote flexibility with the utilities on
25 price. And those are really issues that are back to

1 relationships and negotiating, and I think that's going to come
2 over time, because, you know, historically, the developers and
3 the utilities in Florida just haven't had those relationships,
4 you know, and that can change.

5 We need to encourage utilities to factor in lifespan
6 of a project and cost considerations. For instance, a large
7 scale PV project, a solar project, those panels, you can
8 generally get a guarantee of 25 years if you -- I'm talking
9 about like Power and Light, they guarantee them for 25 years,
10 but they last 40 years. So, I mean, when you think of those
11 things and you look at the price going out, it's pretty
12 economical.

13 And the cost for providing electricity in Florida
14 based on natural gas, coal, and fossil fuels will continue to
15 increase due to our growing economy and population. The
16 increased demand for power, fossil fuel prices, and the
17 abundance of our natural resources prods us to diversify
18 Florida's energy portfolio, and we are here today doing that.

19 This slide here, I didn't -- it's kind of funny, but
20 the young lady before me, Kim Owens, I called her and I told
21 her that I came across this and that it was in my presentation,
22 but what they have done in Jacksonville is very unique. This
23 is a utility that built a relationship with their local Sierra
24 Club and the American Lung Association of Florida and they came
25 up with an agreement that they would have at least 7.5 percent

1 of the electrical capacity from clean and green energy sources
2 by 2015. And, they did it without the legislature or without
3 us.

4 Okay. And what does an RPS cost utilities? The fact
5 is it's back to one percent, and that is probably about right,
6 you know, but renewable energy projects, they differ, you know,
7 depending on the project. You know, depending on how far the
8 resource is from the plant. Are you transporting the wood by
9 truck or rail. You know, you have a lot of factors in there.
10 Where is the transmission points, et cetera. So when you start
11 talking about trying to quantify it, it's extremely difficult
12 and I wouldn't try to do that.

13 But what we know is the cost of building a renewable
14 facility plant has significant costs. However, back to what I
15 suggested before, the life-cycle and the costs of natural
16 resources and fuel will more than make up for it. Also,
17 consider that lifespan issue.

18 What is in it for Florida? Well, we have become good
19 stewards of our planet by reducing emissions. We create new
20 industry in Florida, because at the end of the day, you know,
21 that's what we will be doing. By pursuing this we are creating
22 a new industry and we will create new jobs. We generate an
23 alternative to conventional energy sources. We contribute to
24 national and economic security.

25 And these numbers I got from -- the source is Union

1 of Concerned Scientists, and this is based on, I think, someone
2 earlier mentioned the effort in Congress to create a renewable
3 portfolio standard of 20 percent by 2020. And based on this
4 source, they suggest that in Florida, if that became a law, we
5 would create 3,500 new jobs. Economic development, 1.2 billion
6 in new capital investment; 1.4 billion in income to farmers;
7 rural landowners; 10 million in new local tax revenue, consumer
8 savings; 110 million in lower electricity and natural gas bills
9 by 2020, and 820 million by 2030.

10 Okay. Who is key to making RPS work in Florida?
11 It's going to require all of these stakeholders that I have
12 mentioned here. Luckily we have the leadership of a great
13 governor who has taken a bold step. We have the Florida
14 Legislature, the Florida Public Service Commission, Florida
15 Energy Commission, and you all have a role, and that role has
16 been executed in the private sector, our investment community,
17 our renewable energy developers, our utilities, our businesses.
18 At the end of the day it is going to require the support of you
19 and me.

20 The environmental impact is huge. If you allow
21 nature to provide our energy as it should be naturally, our
22 children will have cleaner air and ultimately cleaner water,
23 fewer pollutants are released into the ozone layer, therefore,
24 reducing greenhouse gas. So, you really can't argue about the
25 environmental benefits at all.

1 And I would just end this, you know, with this slide
2 and just say that more renewable energy will become a reality
3 in our state when we create the right business and political
4 climate to make renewable energy development a part of our
5 economy. Renewable energy investors and developers need to
6 know that we are a friendly state to do business in, and we
7 have always tried to do that except for in this case, you know,
8 but I think we're going to get there. An RPS will change our
9 image regardless of the percentage, so let's make this work.
10 And thanks for allowing me to chat on, and I will answer any
11 questions.

12 CHAIRMAN EDGAR: Mr. Dobson, thank you for your
13 comments.

14 I will say that you started off with one of your
15 earlier slides saying that it may have appeared at some point
16 in the past that Florida was closed to business, so let me just
17 go ahead and say Florida is open for business. Come on down;
18 the water is warm; and spread the word. Commissioners, any
19 questions for Mr. Dobson?

20 Commissioner Skop.

21 COMMISSIONER SKOP: Thank you, Madam Chair.

22 Mr. Dobson, could you please go back to the slide
23 that stated the U.S. resources, it's entitled that?

24 MS. DODSON: Sure.

25 COMMISSIONER SKOP: And the reason I asked, I'm

1 having a little bit of trouble seeing the smaller slides.

2 MS. DODSON: I'm sorry. Okay. U.S. resources?

3 COMMISSIONER SKOP: Well, can we put it up on the --

4 MS. DODSON: I'm sorry. Let me see if I can find it
5 here.

6 COMMISSIONER SKOP: That one.

7 And the reason I asked, do you know who the source of
8 that data is?

9 MS. DODSON: This was -- that's a good question,
10 actually. You know what, I'll get back to you on that. I
11 think I have cut it off.

12 COMMISSIONER SKOP: Well, if you could forward to the
13 next slide for one instance, please. In looking at that slide,
14 and that is the NREL slide from National Renewable Energy Lab.

15 MS. DODSON: Right, uh-huh.

16 COMMISSIONER SKOP: If you look at the areas in blue
17 in that map, and granted on the prior slide when you spoke to
18 it you mentioned that there was limited or no wind resource in
19 Florida. If you look at that map in the central part of the
20 U.S. where the blue dots clearly indicate wind on-line. And if
21 you go back to the previous slide, please, there are no areas
22 of blue in the areas where you see wind on-line. So, again, I
23 find that slide to be a little bit questionable to the extent
24 that although we don't have a great wind resource in Florida,
25 with the proper incentives in place, I do think that we have

1 enough wind and enough net capacity factor to make it work on a
2 limited basis. So, I would just question the accuracy of that
3 slide.

4 MR. DOBSON: Well, you know, I think it's worth
5 exploring. I mean, because the idea of wind is certainly being
6 talked about in Florida. There are many who would suggest that
7 Florida doesn't have the capacity and some that think we do,
8 and I think that we need to get the right heads together to get
9 to the truth of that.

10 COMMISSIONER SKOP: Thank you.

11 CHAIRMAN EDGAR: Further questions, Commissioner
12 Skop? No.

13 Okay. Thank you, Mr. Dobson.

14 We had a request for about a five-minute break, so we
15 are going to honor that request, of course. But it will be
16 very short. Just give us a chance to stretch for a moment, and
17 when we come back I will call on Mr. Jorgensen.

18 (Recess.)

19 CHAIRMAN EDGAR: If everyone will come forward and
20 join us.

21 And next on my list is Scott Jorgensen.

22 Mr. Jorgensen, welcome.

23 MR. JORGENSEN: Thank you, Commissioner for this
24 opportunity to come and speak. My name is Scott Jorgensen, and
25 I'm with Solarsa. We are a solar technology integration

1 company based in Tampa, Florida, and we are currently bringing
2 advanced solar technology to Florida, to Tampa especially.

3 Currently there are 28 partners in Solarsa from
4 around the world, including China, the Caribbean, and Central
5 and South America. Half of the members of our organization are
6 technical regarding engineers, professors, contractors.
7 Myself, I'm on the financial side of Solarsa, and for the past
8 20 years, I have owned and operated a variety of businesses
9 from trucking, warehousing, commercial software development,
10 and restaurants. I know what the cost of energy is to the
11 bottom line of the business, and I personally know what market
12 uncertainties, fuel fluctuations, rising energy costs do to
13 the bottom line of my business.

14 I have turned to renewable energy as a way to have
15 predictability, fixed pricing for energy, reliability and
16 long-term savings. Reducing greenhouse gases is an additional
17 benefit for my economic motivations for reliable energy.

18 Now, it brings me to the first slide. Florida's
19 economic growth owes a lot to air conditioning, and I want to
20 focus on air conditioning because of the impact that it has not
21 only in our usage of electricity, but also in the economic
22 growth of our state. Population growth and economic growth
23 that came with it would have been severely curtailed if air
24 conditioning did not exist. And not just in Florida, but in
25 the southeast, in Las Vegas, and obviously other parts of the

1 world. The question is how do we keep growing and be green at
2 the same time?

3 Air conditioning in Florida. Twenty-five percent of
4 all electricity used in Florida is exclusively for air
5 conditioning our homes and for hot water. The demand for
6 commercial cooling could represent 50 percent of all electrical
7 usage in Florida. Europeans have recognized the importance of
8 solar thermal for heating and for cooling, and they expect that
9 25 percent of their target of 25 percent from renewables by
10 2020.

11 This slide is included for reference, and I won't go
12 into the details of how thermally powered air conditioning
13 works, but from the left-hand of the slide you have energy
14 input, and the energy input can come from a variety of sources.
15 At the top you have solar collectors, and there you have wasted
16 heat from a cogeneration, or you have burning biofuels, such as
17 waste cooking oil or wood pellets. A gentleman earlier talked
18 about the wood pellets are shipping to Europe, and if my
19 company or I were willing to do it we would keep those wood
20 pellets here and use them for air conditioning.

21 And once you produce the thermal energy, it is used
22 in a variety of sources. It is used for obviously heating,
23 dehumidification, and then it goes through a mechanical cycle
24 to produce cooling, and then that is distributed in just the
25 same way as it is used today.

1 So I'm here today to ask the Commission to consider,
2 you know, what should be qualified for renewable energy
3 credits, and I would like to ask that thermal driven air
4 conditioning and heating, dehumidification, and hot water
5 produced by solar thermal and biofuels be considered for
6 renewable energy credits. Additionally, one of the
7 technologies that we brought to Tampa is concentrating solar
8 collectors. This is a collector that produces electricity
9 through concentrated PV cells and heat at the same time, and we
10 would like to also ask that both the thermal energy, heat, and
11 electrical energy generated qualifies for renewable energy
12 credits.

13 What are some of the concerns and impacts in using
14 this type of technology? First, absorption cooling is a mature
15 developed technology and available today. And probably this
16 building is cooled by a chilled water network. Large buildings
17 in downtowns, college campuses, and factories are common to
18 find chilled water plants and chilled water heating networks.
19 So, the technology is not new technology, it's just normally
20 found in very large installations.

21 To use these type of technologies do require changes
22 in the mechanical infrastructure of our homes and some
23 buildings to use the thermal energy produced. The gentleman
24 earlier from the Florida Solar Energy Center sort of
25 highlighted this when he went from using solar thermal to

1 produce heating, and as it was changed from electricity to
2 heating, and it requires a different type of water heater to
3 use the thermal energy.

4 One of the huge advantages to solar air conditioning
5 is that it works best during peak demand times. When the sun
6 is the hottest is when we produce the most cooling with the
7 sun.

8 Again, impact? Reduction of peak demand. Peak
9 demand needs a lot of peak power plants which are costly to
10 operate and raise electricity pricing significantly. When we
11 propose solar air conditioning to consumers we not only look at
12 the energy cost, but we also look at the demand charge. And
13 often we save as much from the demand charge as we do from the
14 cost of the energy. Okay.

15 One of the issues in Australia, if you had to pay the
16 \$16,000 of electricity network infrastructure for your \$2,000
17 air conditioner you might think differently. Again, there are
18 systems that we use today in our homes that are subsidized in
19 part by the electricity infrastructure that we have already
20 developed. Our systems are on-site distributed energy systems
21 that are truly providing energy independence for our citizens.

22 Again, solar cooling can reduce the need for these
23 power stations. Spain has recognized this, and they have
24 special rebates for solar air conditioning that go beyond what
25 is given for flat plate collectors. Spain is absolutely

1 certain that to achieve greenhouse gas reduction thermal energy
2 from solar is required.

3 One of the issues that occurs with domestic hot water
4 heating is in the summertime what do you do with the extra heat
5 that is left over, and this is also the case in the northern
6 states where they have both a heating and a cooling demand. If
7 you build enough solar thermal for heating, okay, obviously in
8 the summertime you have no need for the heat, and so what do
9 you do with it? Again, the answer is solar cooling.

10 Economics and costs of solar air conditioning. Solar
11 thermal air conditioning provide three times the rate of return
12 of solar photovoltaic, so it is more cost-effective. Each ton
13 of solar powered air conditioning built in Florida creates
14 between 5,000 to 10,000 in new additional construction
15 revenues, and 100 hours per ton per year in maintenance service
16 fees. So by using solar thermal air conditioning and solar in
17 general, we are replacing the purchase of fossil fuels with
18 construction dollars, equipment dollars, and maintenance.

19 The source of this is based on four systems that I'm
20 personally involved with right now. One is a five-ton system
21 in downtown Tampa, the second is a 20-ton system that we are
22 probably two weeks away from commissioning in Brandon, Florida,
23 and that is using waste cooking oil as backup. The third
24 system is based on -- we are probably two weeks from having a
25 power purchase agreement to construct the largest solar air

1 conditioning system in the world. It's a 500-ton system. It's
2 part of an existing 1,000-ton district cooling, heating, and
3 domestic hot water network. This is located in Oklahoma;
4 Tulsa, Oklahoma. And fourth, my information is based on Santa
5 Clara, California. Solarsa, my company, has sponsored the
6 university, Santa Clara University, in the 2007 solar
7 decathlon, and we have provided them with a two-ton solar air
8 conditioning system.

9 So where are we today with the technology? For
10 larger systems, it is cost-effective today. We can install --
11 an example is the Tulsa system. We feel we can achieve an
12 internal rate of return of about 7 percent over the life of the
13 20-year power purchase agreement. For small systems, for
14 residential, for small business, we definitely need help in the
15 form of some type of incentives until the economies of scale
16 have trickled down to the smaller levels.

17 Again, thank you for allowing me to come up and
18 present today. I have tried to make it brief and quick, so --

19 CHAIRMAN EDGAR: Commissioner Argenziano for a
20 question.

21 COMMISSIONER ARGENZIANO: Just quickly. I know that
22 there is natural gas absorption heat, cooling, and there is
23 desert coolers, there is evaporative coolers, but the solar
24 coolers, will they work as efficiently in high humidity?

25 MR. JORGENSEN: Yes, absolutely. Our systems, and

1 when we look at doing systems often we couple them together
2 with either gas air conditioning units or electric air
3 conditioning units. It's not likely that we would provide 100
4 percent solar air conditioning systems. And so the
5 efficiencies are different, okay. And typically if you look at
6 a double effect gas-fired chiller, you have an efficiency of
7 1.2 where our chillers with a lower efficiency, but, again,
8 they are using renewable energy. They are using the thermal
9 energy from the sun, and they can be driven not only by solar,
10 but also by other types of biofuels. And, generally you would
11 never use like natural gas directly to run our water-fired
12 chiller because it would be more efficient just to use a
13 gas-fired chiller. Ours is appropriate for using, you know,
14 renewable resources like biofuels or solar thermal.

15 COMMISSIONER ARGENZIANO: Thank you.

16 CHAIRMAN EDGAR: Further questions? None at this
17 time.

18 Mr. Jorgensen, thank you.

19 MR. JORGENSEN: All right. Thank you.

20 CHAIRMAN EDGAR: Tamela Perdue. Thank you for your
21 patience. And to all of our speakers, I'm moving quickly
22 through the agenda, thank all of you for your patience.

23 Ms. Perdue.

24 MS. PERDUE: Chairman Edgar, nice to see you. Thank
25 you so much for allowing me to speak. I am probably the most

1 unique speaker here so far today because I don't have slides.
2 For those of you who don't know, I am Tamela Purdue. I am
3 general counsel to Associated Industries of Florida. And,
4 again, we appreciate very much the opportunity to speak today
5 at your workshop on behalf of the business community.

6 In particular, let me first say that one of our
7 members mentioned this to me just a couple of day ago, we
8 appreciate you including the business community really as a
9 consumer. In this forum and in other government forums you
10 have Public Counsel, or consumer advocates, or someone in that
11 role, and typically those people speak for the individuals or
12 for the citizens. But particularly in what you are looking at
13 now, businesses are consumers, as well, so we certainly
14 appreciate your recognition of that, and appreciate the
15 opportunity today.

16 AIF represents over 10,000 employers in the state of
17 Florida across a variety of industries. We talk to them
18 frequently, and our organization is set up to communicate with
19 them on all kinds of issues that they think are important so
20 that we can be their voice in Florida government. And more and
21 more frequently over the past, probably, 16 to 18 months,
22 energy has become a big issue that is important to them in
23 terms of cost, in terms of environmental impact, and in terms
24 of our future on a lot of different reasons. So, we are happy
25 that you as a Commission have taken this, and that the Governor

1 has, you know, brought it to the forefront really of our
2 headlines.

3 And we have definitely been talking to our members
4 and we have heard back from them, the energy situation is a
5 high priority for most business owners in the state. One of
6 the things that we have heard particularly from companies that
7 operate in Florida and operate in other states, is a caution
8 that you not overlook the good aspects that Florida's system
9 currently has. Particularly, we have a reliable energy system,
10 and we have an affordable system. And our businesses don't
11 want their reasonable costs and reliability to be jeopardized
12 by new initiatives that we undertake.

13 Whether you are talking about fuel costs for fleets
14 of vehicles or utility costs for factories, warehouses, shops,
15 or offices, most people believe that our system is facing
16 economic and natural reality that will require us all to work
17 together to deal with the obstacles that different demands on
18 our environment and on our resources have created. We hope
19 that we can solve those problems adequately and efficiently and
20 economically.

21 A study jointly supported by the National Association
22 of Manufacturers and the American Council on Capital Formations
23 came out about a year ago and concluded that manufacturers will
24 pay -- and this was a nationwide study, not just in Florida --
25 about 148 percent more for natural gas and 115 percent more for

1 electricity by 2020. And that consumers could expect a further
2 61 percent rise in gasoline prices if policies were not
3 implemented to increase supplies of affordable energy from
4 different sources. So we certainly know that it is an issue
5 that we have to look at other alternatives to meet our needs
6 and to continue our economic growth and the quality of life
7 that we enjoy here in the state.

8 AIF members advocate continued development of a
9 diverse energy source portfolio. There is really not one
10 particular element of such a portfolio that we would oppose.
11 You have heard from a variety of different sources today, and
12 I'm not going to belabor you with details of any of the ones
13 that we pick over another. And we don't have, or I have not
14 gone into any scientific depth with the studies that we have
15 done, I just have available what we have heard on a few of
16 those from our members.

17 The good news is that there are a lot of energy
18 sources in fossil fuels and in other renewable sources
19 throughout Florida, that we do have a lot of natural resources
20 that can be explored in a way that is not harmful. And we
21 certainly are supportive of those future efforts, those
22 research efforts. Specifically, of what we have done so far,
23 this past legislative session AIF supported a bill that was
24 signed by Governor Crist that opened the way for utilization of
25 coal gasification technology. We think that will offer

1 consumers a good investment in new clean technology while
2 relying on our country's most abundant energy source, which is
3 a win/win situation for everyone.

4 This year also the Legislature funded a research
5 effort at the University of Florida to demonstrate the
6 commercial use of technology that can break cellulose plant
7 material to ethanol for fuel, which is an energy source that
8 significantly reduces greenhouse gas emissions. We have also
9 strongly supported over the past several months the farms and
10 fuel grains program that Agriculture Commissioner Bronson has
11 spearheaded, I believe, and we attended the summit that he held
12 with that, I think it was last week, in St. Petersburg. And a
13 lot of the technologies that were presented at that were also
14 as astounding and as amazing as what you have heard here today.

15 We suggested the idea in the very early discussions
16 stages that the state may want to consider creating a Florida
17 biorenewable venture fund so that Florida itself can be an
18 investor in new and cutting edge biorenewable energy ideas.
19 The idea would be for the state to take an equity interest into
20 developing those products and those services so that if that
21 research and the ultimate outcomes are successful, then the
22 taxpayers of the state would also be rewarded with future
23 profits. So we think that perhaps the Commission could explore
24 and possibly suggesting to the Legislature and Governor that
25 some kind of venture idea like that may be another win/win

1 situation for everyone.

2 We have heard cautions from our members about wind
3 and solar. Those are obviously the two most popular topics
4 right now, particularly in light of the Governor's executive
5 order. And, again, this is just things that we have heard more
6 anecdotally from our members. There is definitely a concern
7 that -- we have heard some concerns about wind turbines and the
8 danger that they may present to birds and to other forms of
9 wildlife in our state, and that is a concern that we think
10 needs to be looked at. We have also heard about noise
11 pollution and visual pollution.

12 Several months ago we were looking at and we did a
13 lot of polling on oil drilling in the Gulf. And one of the big
14 roadblocks to that was people didn't want to be at the beach
15 and see oil rigs out in the ocean. Well, they also don't want
16 to see a wind turbine sitting on the beach. So, we think that
17 everything needs to be a balanced approach, and I'm just
18 sharing with you the things that we have heard back from our
19 members.

20 On solar, we have also heard that Florida's
21 meteorological conditions may not be as conducive as what some
22 other states are. It could be from clouds or rain, like what
23 we are having now, may present a reliability issue from solar
24 generation. Also, under our current incentive formula that we
25 have available, the capital costs of implementing solar on an

1 individual basis is pretty significant. And a lot of
2 businesses -- you know, you have to remember in Florida,
3 85 percent of our businesses have fewer than 20 employees. So
4 we are a very small business driven state, and that initial
5 capital that it takes to invest in solar, whether it is water
6 heaters, or panels, or whatever on a building is significant to
7 a business owner. So, you know, as those things are considered
8 new incentives or additional incentives, it would help to have
9 those as well to make that work.

10 We also certainly support any type of conservation
11 measures that you can direct and help us to implement. And,
12 finally, we also would encourage you as much as you can to work
13 with neighboring states. I understand that not too long ago a
14 plant in Georgia, Southwestern Georgia that I think is less
15 than 100 miles from the Florida border was approved, and is
16 going to be built, and it is the kind of plant -- it is my
17 understanding that this Commission has been working recently as
18 well as the Governor and other leaders in our state, it has the
19 potential to produce the kind of emissions that we are trying
20 not to let happen in Florida. And with that kind of proximity
21 with our neighboring states, you know, you can't force them to
22 do anything different, but as much as we can work with them to
23 try to get them to do things the same way that we do things
24 here in Florida, so that we don't get their negative impacts,
25 we would certainly encourage you to do that, as well.

1 Again, on behalf of the Florida's business community,
2 thank you for undertaking this enormous challenge and serving
3 our state in this noble cause. As we go forward we are -- next
4 week we are having our annual educational conference, and I
5 know that two of our sessions -- and I don't think this has
6 ever happened, but two of our sessions will be dealing with
7 energy issues. And as we hear more from our members, we will
8 be happy to share that with you. And as you have questions for
9 the business community, we will be happy to facilitate those,
10 as well.

11 CHAIRMAN EDGAR: Thank you. Commissioners?

12 Commissioner Argenziano.

13 COMMISSIONER ARGENZIANO: At the beginning of your
14 presentation, and I get where you are going with everything,
15 AIF members are concerned if there is an increase in energy
16 cost to them, but you are not suggesting that AIF members are
17 happy with the status quo? I mean, I have heard for years that
18 the big energy users, you know, the Publix, the big energy guys
19 need a break somewhere down the line. And I guess what I'm
20 getting to is that I hear what you are saying that we need to
21 proceed with caution because you can't put people out of
22 business, either.

23 But if you were talking about the viable venture fund
24 that you mentioned -- and what I see somewhere down the line if
25 costs are bumped up a little bit, that somewhere down the line

1 they may come down, you know, after things really get
2 established. You ask the PSC to look into maybe talking to the
3 Governor and Legislature about creating a viable venture fund,
4 would you think AIF's members be willing to be contribute to
5 that fund?

6 MS. PERDUE: I can say that typically businesses,
7 including our members, are frequently involved in
8 public/private partnerships in a wide variety of areas. So I
9 know that they have definitely been involved in other
10 private/public partnerships, and I can't imagine why this one
11 would not be something they would consider, as well.

12 COMMISSIONER ARGENZIANO: And the only other thing I
13 have is at the summit also there were businesses who have
14 implemented solar or different alternative renewable
15 techniques, and they have mentioned these savings. And there
16 were some really great numbers that you might want to use those
17 numbers from the summit to show some of the businesses that AIF
18 has as members to show that that could wind up being a bigger
19 savings for them in the long run.

20 MS. PERDUE: We'll be happy to do that. Thank you.

21 COMMISSIONER ARGENZIANO: Thank you.

22 CHAIRMAN EDGAR: Thank you.

23 Commissioner Skop.

24 COMMISSIONER SKOP: Thank you, Madam Chair.

25 And, again, echoing Commissioner Argenziano's

1 comments and some of the comments you made, again, I am
2 sensitive to industries costs as users of utility services,
3 whether it be water, electric, what have you, and the need to
4 constrain those costs. And I recognize that this is a
5 significant challenge, and how do you balance the interests so
6 that rates don't go up. So I just want to articulate that I am
7 sensitive to that. But, again, we are trying to move forward.

8 But I did want to briefly address two of the concerns
9 that I think that you had from your members with respect to
10 wind and/or solar. With respect to wind, having managed
11 renewable energy projects, wind projects in the Altamont Pass
12 of California where we had significant avian issues, I think
13 some of those concerns are overstated for Florida, and I think
14 ultimately the environmental impact studies will show that.

15 And, secondly, with respect to the viewscape, there
16 needs to be a balancing of interests. I mean, we need to
17 diversify our energy source and having wind, solar, and other
18 clean renewable energy sources are a part of that mix. I'm not
19 saying that they need to be the complete, you know, way of the
20 future, but, again, having that balanced diversity requires
21 some of this. And I think the state as a whole, all the
22 stakeholders kind of need to get comfortable and embrace some
23 of this for the good of the state. Because, again, when the
24 wind blows it's an intermittent resource, but it is available
25 and we need to capture that. And it is a clean form as opposed

1 to other alternative energy methods that have been mentioned
2 here today. It is emission free, as is solar, so that needs to
3 be part of the equation. Thank you.

4 MS. PERDUE: If I can just briefly respond. I
5 attempted to communicate when I started out that we completely
6 support full diversity and there is nothing that we oppose.
7 And none of the comments that I made were intended to be
8 scientific data or anything, that this is bad and should not be
9 used, these are just the cautions that our members have had.
10 And we certainly appreciate your comments, as well.

11 COMMISSIONER SKOP: Thank you.

12 CHAIRMAN EDGAR: Thank you.

13 Ms. Perdue, thank you for your participation. And as
14 I said earlier, we will point out again that one of the things
15 we hopefully try to do is open up our processes so that we have
16 input from all stakeholders. And I appreciate the
17 participation of AIF, and we are trying real hard to hear the
18 concerns, comments, suggestions with all of the work that we
19 are doing from all customer classes.

20 And, so, our next speaker is Keith McAllister. And,
21 Mr. McAllister, also, thank you for your patience.

22 MR. McALLISTER: Thank you. Thank you for the
23 opportunity to present.

24 Let me introduce myself first. I'm Keith McAllister.
25 I'm with the North Carolina Solar Center, and also with the CHP

1 Center Southeast. That's a DOE-sponsored program that helps
2 CHP projects get started. We are focused in the southeast,
3 which you can imagine is a pretty tough task.

4 As I have been sitting here listening, to get off the
5 subject just a little bit, and then I will get right back and
6 hurry up. I know we are constrained by time here. North
7 Carolina, you guys are probably about two years behind us in
8 North Carolina. We actually have an RPS that has gone through
9 our Senate, Senate Bill 3, if you are interested in looking.
10 It is now in the House and going through committees in the
11 House, and it looks pretty good that it is actually going to
12 pass this year. So we will have a -- fingers crossed -- an RPS
13 this year. It is 7-1/2 percent renewable energy and 5 percent
14 energy efficiency. As Katrina was speaking earlier, we found
15 that by including energy efficiency it managed to minimize the
16 impact on ratepayers. I believe it's about a 1.2 percent
17 impact out ten years, I believe.

18 That was opposed to about a 35 percent increase by
19 just building new central plants. And, so, I would ask you to
20 not just look at what the RPSs may cost you, but what the
21 alternatives cost you, as well.

22 As I spoke with Doctor Graniere about what might be
23 of interest to the Commissioners here, I was going to come down
24 and give the typical CHP speech, you know, diversified, offset
25 T&D costs, energy efficiency. And he said, no. He said, we

1 want to hear a bit about how CHP and REPS might help the
2 economics in Florida.

3 One of the things that our state energy office talks
4 a lot about is the biomass potential in North Carolina, and as
5 Bob and I discussed that, he thought that that might make a
6 good impact for this setting. So, I will try my best to
7 impersonate Larry Shirter (phonetic) from the North Carolina
8 State Energy Office.

9 This is a little map of Florida, and both your
10 generating assets as well as your resources, which there are
11 none, much like North Carolina. I believe there is a little
12 bit of oil producing wells up in the panhandle, but all of that
13 gets shipped out of state to be refined before it comes back
14 into Florida. In 2004, the electric utility spent
15 approximately \$6.8 billion on fuels for generation in Florida.
16 All of that money went out of state or out of country. I think
17 other speakers have spoken to that. Except for about
18 \$60 million, which was biomass-based, which obviously stayed
19 within Florida, and helped the economy of Florida. And sort of
20 backing that up, a quick fact that I found on the web. If two
21 percent of the fuel needs were used for biomass, it would be a
22 \$100 million impact, and that sort of jibes with information
23 from the Energy Information Administration.

24 In 2004, Florida's energy mix. Coal was about
25 37 percent, and you can read the numbers as well as I can. The

1 money shown there is what was spent on each one of those
2 segments. The red indicating money flowing out of Florida and
3 the green money that stayed within Florida. It's sort of
4 interesting, one percent of the cost was biomass, but it
5 produced three percent of the fuel, of the actual electricity
6 used in Florida.

7 And the problem is just getting worse. Here is some
8 data that shows the increase in oil, coal, uranium, natural gas
9 since 1999, and we don't expect it will level off or come back,
10 it is just going to keep increasing. We have heard a lot of
11 discussion about what are the costs of renewable fuels. Here
12 is the trend since about 1980 on renewable energy. Wind is
13 already there, cost competitive. PV has got a ways to go.
14 Geothermal, there is not a whole lot here in Florida, so we
15 don't need to talk about it. But solar thermal is already
16 there, and I think you guys pretty much have that figured out.
17 Biomass is also probably pretty close to being cost
18 competitive. If we look at cost of new power plants, I think
19 you will find that it is cost competitive.

20 Biomass also has a great impact on emissions. We
21 have heard many of the speakers talk about that. CCWE is
22 Craven County Wood Energy. It is a 45-megawatt plant in North
23 Carolina that takes any wood scrap they can find within about
24 25 miles of the plant. It gets shipped in. It could be people
25 putting in new development, so we have clearing from the

1 development or construction waste. It could be -- there is a
2 fair amount of logging industry in that area of North Carolina,
3 so anything from what is left over after logging or just
4 culling during the 20 years that it takes for the timber to
5 grow they will gather up and burn.

6 The blue stack is carbon dioxide, which is of
7 specific interest here in Florida, at least lately. As you
8 will notice, there is a 2,078, that would have to be like sort
9 of off the chart to be representative to the scale. Carbon
10 dioxide for biomass is actually -- most people call it neutral,
11 there is actually a negative impact if you look at the NEL
12 study from Maine, it shows close to about a pound of reduction
13 of carbon dioxide for every kWh that is burned as opposed to
14 allowed to decay naturally, and that has to do with the
15 greenhouse gas equivalence of methane versus carbon dioxide.

16 So, how can CHP help? Certainly anything that we did
17 with solar, solar thermal, wind energy, would reduce those
18 dollars flowing out of the state of Florida, if we can keep
19 that here in Florida. If we were to do just biomass plants, if
20 you look at the 30 sort of up on the chart, if we were to do
21 just biomass, again, that's that one percent, that \$60 million.
22 That is what that represents, and if we increase that we keep
23 more money in the state of Florida.

24 However, by using combined heat and power and taking
25 the energy efficiency that comes along with it, in this

1 particular example there is an additional 45 units of energy
2 that could be used, as one of our previous speakers was talking
3 about, for heating or cooling, drying, many applications. That
4 represents either a reduction in typically natural gas in a
5 boiler, or other drying process, it could also represent a
6 reduction in electricity if you have electric resistant
7 heating. And certainly in the cooling applications it would
8 represent a reduction in electricity, generally. We generally
9 see electric in doing air conditioning systems today.

10 However, as Katrina from EPA has pointed out, the
11 only way that we get credit for that is if you guys consider
12 energy efficiency in our REPS. If you don't count energy
13 efficiency, there is no incentive for anyone to do this type of
14 activity. You know, we spoke earlier, North Carolina founded
15 that the energy efficiency is what really made an impact on the
16 overall costs. It can also make a huge difference on how much
17 fuel you are purchasing from outside the state, so it can have
18 a huge economic impact, as well.

19 While we're on this slide, just briefly, installed
20 reciprocating diesel generators, natural gas generators
21 certainly could use biomass. It is somewhere between 900 and
22 \$1,500 a kW; gas turbines, depending on the size, 700 to 1,900;
23 microturbines, 2,000 to 2,200. The latest filings in the North
24 Carolina Public Service Commission for Duke Power's
25 800-megawatt Cliffside coal plant is about \$3,000 a kW when you

1 include financing. Estimates from EEA show about \$650 a kW for
2 T&D costs, and that's in the deserts of Nevada. It's probably
3 a little bit higher here on the east coast. So you can see
4 that on a capital basis many of these technologies are already
5 competitive with where central plants are going.

6 Many speakers talked about the potential, so I will
7 skip that part in the interest of time.

8 Again, carbon dioxide. Another benefit of CHP. If
9 we look at how much energy is put into a conventional power
10 plant in a boiler versus a CHP that can provide the same amount
11 of energy, we see an increase of -- or a decrease, if you will,
12 of over half in the amount of carbon. Thousands of tons of
13 carbon that is emitted each year just by simply placing a
14 combined heat and power plant over the electric generation
15 close to the site where they can make use of the waste heat.

16 We have had many speakers talk about applications
17 from digesters to gasifiers. We have had speakers talk about
18 technology, so I will go quickly through this. All of these
19 are opportunity fuels that are in abundance in Florida from
20 landfill gas to manure, wood waste and residues, municipal
21 waste, poultry litter, and certainly energy crops. I
22 apologize, all of these use some sort of pretreatment as you
23 see under LFG. The LFG mentions pretreatment only, but you
24 need some sort of technology to process the fuel to make the
25 methane which you can burn. The technology that can be used,

1 that is actually a reciprocating engine at a hog farm in North
2 Carolina. It has been in place since about 1997. Elliott
3 Microturbine (phonetic) is actually a Florida company, so if we
4 were to subsidize microturbines you would be supporting the
5 economy in Florida, as well.

6 The power plant that you see in the aerial view is
7 actually UNC Chapel Hill. It's a circulating fluidized bed
8 plant. Right now it uses coal. Once this REPS passes in North
9 Carolina, they are looking forward to switching over to wood
10 waste. So technologies that use coal right now can be
11 augmented either through co-firing, or in this case they plan
12 on switching purely to wood waste.

13 And then the last picture there is Fort Bragg, North
14 Carolina. It is a five megawatt gas turbine with a heat
15 recovery steam generator and a 1,000 ton absorption chiller on
16 it. We have proposed exactly the same set up at a lumbermill
17 in North Carolina. They have a landfill very close by. They
18 actually want to take the wood pellets and ship them -- they
19 are burning wood pellets in the boiler now. They want to ship
20 them to Europe to make some extra money and buy the landfill
21 gas. So we use this application at Fort Bragg, as an example,
22 and it worked out very well for them.

23 Several speakers have talked about the need to
24 identify what opportunities exist within Florida. The chart is
25 very hard to read, but if you follow the red link underneath of

1 it there is a very detailed report on how to look at
2 opportunity fuels and make decisions. The little circles sort
3 of give you an indication as to where there are some problems
4 or whether it is very good under the different categories for
5 the different opportunity fuels. The NREL study, we actually
6 took it from North Carolina and went county-by-county to see
7 what we could do in North Carolina, and then plotted locations
8 of each of the resources within North Carolina.

9 Once you have that kind of information it makes it
10 very easy for developers to figure out, okay, do I have an
11 application nearby where I can use these opportunity fuels. So
12 I would certainly encourage that type of research to be done,
13 if it hasn't been done already.

14 And then, just briefly, I already talked about the
15 CHP Center of the Southeast. There are multiple CHP centers
16 throughout the country. We were actually the last one to get
17 going, but we all work together. We all have plenty of
18 resources. So if you guys need any more help, please call us.
19 Thank you very much.

20 CHAIRMAN EDGAR: Thank you. I like it when people
21 offer to help us.

22 Commissioners, any questions for Mr. McAllister at
23 this time? No. All right.

24 Thank you.

25 MR. McALLISTER: Thank you.

1 CHAIRMAN EDGAR: And this is Mr. Ashburn with TECO
2 Energy.

3 MR. ASHBURN: Thank you, Commissioners. I know the
4 hour is late, and I am going to try to keep it short.

5 I was asked to present from our perspective as a
6 future mandatee on the subject of the likely impacts, and I
7 think it is important to understand a lot of the concerns and
8 potential impacts that we are seeing or are concerned about
9 were brought up so far by many of the speakers. Certainly the
10 most prevalent one is the cost impact on rates. It is
11 concerning to us about will these new renewable technologies
12 and opportunities have an impact on rates because they are more
13 expensive.

14 We would be concerned about how you build a renewable
15 portfolio standard with set-asides for certain groups which may
16 be more expensive than others. And if you are going to set
17 aside for a group that is more expensive, if the solar is move
18 expensive right now before its technology has declined in
19 price, then you want to make sure you have enough of lower cost
20 alternatives to try to mitigate that rate impact for customers.
21 So that's a concern.

22 The availability of adequate resources. We have
23 heard some of that about is there enough in Florida to meet
24 some of the -- whatever the new portfolio standard will be.
25 There has been debate about how much wind is there and how much

1 solar there is, and how much municipal solid waste is available
2 in the state. If it is totally expanded, how much will that
3 have an impact. So the amount that is available out there is
4 certainly a concern that we need to be concerned about.

5 Energy efficiency has been mentioned several times as
6 a component of a portfolio standard that should be considered,
7 and we think that should be considered, as well. We should be
8 mindful that we have been doing energy efficiency and
9 conservation in Florida since the early '80s and have been very
10 successful at it. We should continue that and expand it, and
11 many of us are coming up with new programs to help benefit that
12 and encourage growth in that area. But that, as was also
13 mentioned by a previous speaker, that's a very cost-effective
14 way to do it, and that may mitigate some of the more expensive
15 alternatives.

16 Another concern is getting consumers and participants
17 to participate. Putting PV arrays on people's roofs and things
18 like that may have -- while there are many out there who would
19 welcome that, there are some who would not and would not want
20 them on their neighbor's roofs and those kinds of things. So,
21 that is a concern. But getting customer acceptance of the kind
22 of facilities that we may want to put out in a distributed
23 manner, or if it is a large facility that may look like a power
24 plant because it is bigger, will neighbors be okay with that.
25 So those are some concerns.

1 You will be very thankful that I'm not going to show
2 you that map again, but it showed that there is something like
3 20-something states that have an RPS, and I think there was
4 another presentation that was talking about how the RPSs have
5 evolved over sometime. And I think if you look at it you will
6 see that something like 17 or 18 of those states started with
7 one number as an RPS and then over time the number changed.
8 And I think it is important from a concern that -- I think we
9 have had concerns expressed about the 20 percent, is it
10 achievable, is it not achievable. When is it going to be
11 achievable? Those kind of things.

12 I think it's important to see that all the states
13 started out with something, and then were -- they are still
14 around and they reviewed it again after awhile. And we talked
15 about the conservation goals. We started out with goals back
16 in 1980, and over time this Commission reviewed them on
17 occasion to see if they were still achievable, should they be
18 stretched, should they be retracted, those kind of things
19 should be looked at. Whatever you come up with as an RPS, and
20 we have talked about moving quickly, and I think as the
21 Governor suggested, that's an avenue to go, but don't be
22 concerned, I think, that you are not going to be able to look
23 at it again. No one is going away. We are going to be here,
24 and we are going to be looking at it as we go along, and as we
25 continue to review it as we go on, if there is a way to stretch

1 it more, if it needs to be retracted, if it needs to be
2 revised, you will be here to do that. So I think that is a
3 concern that people have, but it is a concern that is
4 manageable because you will still be looking at it.

5 With that, if there are any questions, I would be
6 happy to answer them.

7 CHAIRMAN EDGAR: Thank you. Any questions for Mr.
8 Ashburn at this time? Not now, but I'm sure there will be
9 later. Thank you. Thank you for your comments.

10 Okay. We are going to be moving on. We are near the
11 end, and we are just going to push through. And we are moving
12 to Section F on our agenda which talks about strategies and
13 incentives to ensure compliance and other related issues.

14 And, Mr. Jacobs, I see that you are still with us.
15 Glad to see you. Please come forward.

16 MR. JACOBS: Good afternoon, Commissioners. Yes, we
17 are here, and I thank you for giving me the opportunity to be
18 here and to speak with you. I understand the challenges. It's
19 late in the day, rain is dripping off the roof, dinner is
20 calling, so I'll hopefully be very, be very quick.

21 My comments here today are offered on behalf of the
22 Southern Alliance for Clean Energy, which is a nonprofit,
23 nonpartisan organization promoting responsible energy choices
24 that solve global warming problems and ensure clean, safe, and
25 healthy communities throughout the southeast. In addition, my

1 comments are joined by the Sierra Club, a nonprofit corporation
2 with approximately 700,000 members and groups around the
3 country, and more that 30,000 members in Florida.

4 I would suggest to you that you have heard a lot
5 today about doing a lot of things. And if I can, I would kind
6 of like to drill down to real important essentials. Yes, you
7 should get started now, Commissioner Argenziano, Commissioner
8 Carter, and Commissioner Skop. You should get started now, but
9 it is absolutely important that when you get started you do so
10 with an eye and with a planning horizon for the future.

11 Stop and think about this. The Governor has been
12 very clear what he wants to accomplish. He wants to get
13 20 percent renewables. Is it deemed to be the most practical
14 use of the time and efforts of this body to sit and hover
15 around an industry? And mind you what we are doing when we set
16 up an RPS is we are saying we are moving from a government run
17 subsidized way of promoting renewables, and we are going to a
18 market driven. What I think I heard today is that there is, at
19 best, a nascent market, but probably a very embryonic market.

20 It strikes me that one of the fundamental issues you
21 are going to try and address up front is to what extent there
22 is real probability of a market being formed, because
23 ultimately in the long haul this is only going to work if you
24 are going to be an RPS is if the market can make it work. If
25 you have to sit as a regulator of this market to make sure that

1 it works, we have failed. And there is evidence around the
2 country of that fact where a poor design, poor policy, and poor
3 factors have doomed the RPS from having a real impact on the
4 goal of promoting renewable as a resource in the energy mix.

5 So what we have to do is come up with market driven
6 strategies, and then we must make sure that those strategies
7 produce an open, competitive market. And, yes, there are cost
8 impacts, but I believe over the long haul if you really do the
9 job of doing the markets those cost impacts are going to be
10 downward over the long haul.

11 I believe that there are cost mitigation benefits to
12 doing RPS. Some of those are if you reduced the certainty --
13 I'm sorry, if you reduce the uncertainty and you enhanced the
14 stability and you do that through a number of ways, I won't go
15 through all the details right now, mostly through design,
16 mostly through compliance and enforcement, you can create a
17 planning horizon for investors. There is a business case here.
18 And I know many of you heard many of the utilities step up to
19 the plate and say we want to be in this. We want to own this
20 stuff. I don't think they would be doing that if they are
21 opening themselves up to losing millions of dollars.

22 There is a business case here. How to crystallize
23 that, how to hone in on that business case is vital right now.
24 So, we can reduce costs by making sure that we have a stable
25 RPS policy to foster long-term contracts. That is essentially

1 one of the elements that you see throughout the literature.
2 But not subsidies, not subsidized contracts as kind of maybe --
3 I don't want to be down on PURPA, but you want to distinguish
4 this. You want to have flexible timelines for compliance. I
5 saw -- Mr. Dolan is gone. I told him I was going to advocate
6 some other things, but actually I do believe that there needs
7 to be flexibility. But if you put it in, it needs to be
8 promoting and nurturing investment decisions, not regulatory
9 decisions.

10 You shouldn't have flexibility for somebody who just
11 wanted to get out of meeting their goal this year. It ought to
12 be there because they are saying, wait a minute, if I would
13 have had this investment in this market I would have had these
14 RECs, I would have this amount of revenue to my bottom line.
15 And so you want to have flexibility so that it promotes
16 (inaudible) decisions, not to keep a bat over somebody's head.
17 And if it turns out that that is what you're doing, then that
18 is not what the market should do.

19 You should proliferate an open and competitive
20 renewables market, basically diversity. You have preached
21 that. You have said that you need that. This ought to be a
22 component of accomplishing that, and it should not waver from
23 doing that.

24 This is a new field, but this is absolutely rocket
25 science. This is a complex issue. This is complex task that

1 you have taking on and the Governor has put before you. But I
2 agree with Mr. Kise, it can be done. There are examples around
3 the country where it is being done. But evidence shows that
4 there are cases where it is not being done. There is clear
5 evidence that where there is poor policy, poor design that RPSs
6 add very little and, in fact, can detract from the idea of
7 promoting new renewables.

8 In fact, if it's done bad enough, you can wind up
9 having compliance costs that really overshadow and diminish any
10 kind of economic benefit you could see from this. So, it is
11 incredibly important, and I applaud you for taking this time to
12 build a consensus, to bring stakeholders in so that you get an
13 understanding of how to do this right. This is time well spent
14 and resources well allocated.

15 Now, when things are done well, there is evidence
16 that they do work. Texas, some will argue that maybe it's an
17 outlier, but Texas is demonstrating that the RPS itself can be
18 a factor in enhancing development, new development of
19 renewables. On the other hand, Massachusetts, Nevada, Arizona,
20 New York, and some would argue California, I kind of leave them
21 out of that group, but policies in this group of states are
22 struggling, and I think you heard some of that today. And they
23 are still trying to figure out how to tweak their designs to
24 figure out how to make them come back to the goal of enhancing
25 a diverse renewables market. And then, of course, Maine is an

1 example of a state where basically the RPS program has allowed
2 folks to come in and do what is already being done.

3 Now, this is a sensitive subject in Florida. There
4 are industries that we have heard argument today that you ought
5 to make sure that you don't leave the existing resources out.
6 I agree with that. But, if your goal is to bring new
7 innovative resources to the table, why would you sit here and
8 make sure that you just only keep the debt that you already
9 had. You have to figure out how to balance that, and you have
10 to balance the input and the resources that are already here
11 and the capacity that is already here.

12 And I see a note for you, because I agree with what
13 you heard today about energy efficiency. I absolutely agree
14 with that. But my point is this with regard to energy
15 efficiency, the capacity as we now know from various businesses
16 and information to do energy efficiency is here now. There is
17 cost reduction that is available today, now; and normal
18 activity in this market to promote doing that today, now.

19 Do you want to exercise and exert and allocate
20 resources from this policy, this new policy to accomplish that
21 end when these little actors might want to do it today? Yes,
22 we want -- so, I guess, I'm getting a bit confused, but I think
23 what I want my bottom line point to be is, yes, consider
24 putting energy efficiency in an RPS. But when you do it, make
25 that an especially precise point and balance it against whether

1 or not you want to promote newer technologies, as well, and new
2 capacity.

3 So that if somebody can go out today and do energy
4 efficiency, you want to make sure that you give them only
5 enough to be able to do that as they should have done, and then
6 put more resources to bring in more. Because you heard talk
7 today about a lot of research and development that needs to be
8 done to bring some of these resources to the table. And I
9 guarantee you that that is going to take a lot of effort. And
10 in my mind you, as a regulator, you want to be about figuring
11 out how to crystallize getting those technologies to the market
12 without it being inundated by all that research and
13 development. So that means you have got to send it out. You
14 have got 18 and 20-year contracts. And for solar that might
15 not be long enough, we may have to do a carve-out and Solaras
16 does advocate for a carve-out with some clarification and
17 restrictions.

18 And let me try to move on now. Measure of success.
19 As I indicated already, more stuff. Now, this section is about
20 enforcement and compliance, so let's move to that. Design does
21 actively impact what you will have to put into enforcing and
22 ensuring compliance with your program. You have heard a lot of
23 the things already. I won't repeat them. You know, whether or
24 not you measure in kWh, megawatt hours, all of that stuff,
25 those are very deep important details that you need to spend

1 time figuring out and then do a cost/benefit analysis on most
2 of them.

3 One that I will touch on, I talk about flexibility
4 and I will talk about it a little bit more again, but
5 administration. We have heard a lot of time today, and I am
6 going to be able to talk about what RECs in just a moment, but,
7 I have not heard much talk today about how you administer a REC
8 system, and I would like to suggest to you that you want to
9 give a lot of thought to that. From what I have seen that is
10 an incredibly important issue, and I'm going to turn my
11 comments to that very quickly.

12 One of the things you want to look at in the design
13 stage is impacting on and from (inaudible) policies. Well, you
14 know, are we going to do a cap and trade? If you want to do a
15 cap and trade, do you want to figure out how to distinguish
16 what you are incenting in the RPS from what has to happen in
17 the cap and trade, i.e., the attributes that come out of a
18 renewable may have emission benefits to them. Are you going to
19 play that into the RPS system and incentives, or are you going
20 to play that into a cap and trade? Those are very important
21 thoughts that you have got to have as you design both.

22 So what is happening in some places where it is not
23 being done right? It's clear that there are places with
24 uncertainty in their objectives and design which cause market
25 uncertainty. There is an inappropriate weighting of

1 technologies. There is unclear and inadequate enforcement;
2 unclear and inadequate compliance flexibility; overly lenient
3 compliance flexibility, which can have its own problems, and
4 all of this.

5 Now, in enforcement what do you do, how do you do
6 that? Well, the bottom line, money, and enough money to make
7 it hurt bottom line. Simple and straightforward. The
8 recommendation is that the penalties ought to amount up to
9 about 35 times the REC price. Now, I heard testimony earlier
10 today that \$57, I think it was a kilowatt hour, and that wasn't
11 doing the job. This would track what's happening in the
12 market, so you talking 300 times what it will cost them to buy
13 a REC. If they get to the end of the reporting period and it's
14 is clear that they have not done -- and here is maybe the
15 bottom line, do you want to be involved in making that
16 decision? Our recommendation is that you shouldn't be. This
17 should be an automatic bill.

18 If they get to the end of the reporting cycle, and
19 you can choose for some flexibility options that I have in a
20 moment, and you exercise the flexibility options and they are
21 not in compliance, it's automatic. We want the message to be
22 absolutely clear. Because, again, the idea to put in place
23 those investment decisions, you want people to be thinking up
24 front about how to do more market-based things than more
25 regulatory stuff. And it should be applied to generators and

1 to sellers. And it should be harshest when you find any fraud.
2 I told Billy that's good adjustment.

3 Now, compliance. I distinguish compliance from
4 enforcement. Compliance is where you are nurturing versus
5 enforcement, again, where enactment hasn't worked to do what is
6 needed to comply with this policy. Here you are trying to do
7 the tweaks and the turns to try to see how to make this thing
8 work, what you heard some of the other states are already
9 doing. And there will be that period in Florida, you can just
10 expect that. That there is going to be a time where this thing
11 is going to need to be tweaked and turned to figure out how to
12 make it work.

13 So, in this compliance effort, what do you do? There
14 are is basic options. One, you can do the RECs, and we have
15 heard a lot about that and you need contract verification. I
16 don't want to get -- I want to move very quickly here. The
17 RECs, two or three points. You have to have a market, an
18 active competitive market for the RECs. There must be a
19 verifiable tracking system. A lot of states just use
20 self-reporting. It must allow the greatest flexibility and
21 easiest administration, and it must -- but it has its own
22 policy and compliance issues. And it must be -- most people
23 have found it is most economic, works the most economic when it
24 is more than one state. Now, there are some states where only
25 one state would have done RECs, but I think in those states

1 that are most likely, most similar to Florida, New York has its
2 own state-owned grid and -- well, maybe not a grid, but they
3 have a state-owned RPS, state-owned RPS. And Texas, they have
4 elected not to go just with RECs. I think it would -- I'm
5 sorry, their system is not -- their compliance system is not
6 just with a trading system. In New York they do contract
7 management, I stand to be corrected, and in Texas they have
8 RECs, but they are required to do what they called bundled with
9 the power.

10 And the concern is how do you make this a viable,
11 robust, fungible trading system. And I won't throw that map
12 up, I guarantee you I won't, but I think if you will recall --
13 maybe on the TV screens where you have an image that stays
14 there long enough it kind of comes back at you -- if you
15 remember in most of those maps there was nothing in the
16 southeast remotely associated with an RPS. So, if Florida does
17 a REC trading system, okay, and it would probably be in-state
18 only anyway because it is a Florida state only grid, but
19 basically that is where most of the trading will be happening.
20 I have asked, well, should you hook up with another state that
21 is doing it already, and that is a very complex issue. You can
22 consider it, but it is a very complex issue. Something to
23 think about.

24 Now, I talked about the contract cap. Basically,
25 this is basically you track the sales along with the power

1 attributes that go along with that sale. It minimizes market
2 power issues. It doesn't remove them, it minimizes them. It
3 is then -- this path has been followed, like I said, in New
4 York where they did not have a competitive market for RECs.

5 Now, flexibility. Again, where you have market
6 conduct that is indicating a desire to work within the system
7 and to meet the goal, but in some instances they can't find the
8 RECs in order to come into compliance. They are just not
9 there. Or in some instances the prices begin to flow out of
10 what seems reasonable, and I don't know what that would be.
11 These are some of the things that have been done. A cap on REC
12 prices. You heard about that earlier, where you would cap the
13 prices, but they still have to be in compliance. What happens
14 as I understand it, and I stand to be corrected, is that you
15 can be a proxy system where there would be some kind of a proxy
16 and then some kind of a way there is a true-up to figure out
17 how to do it. I won't get into the details, it is much too
18 late in the day to talk about that.

19 Compliance true-up. There is a period allowed where
20 they can come back and true-up. Credit banking where you have
21 a renewable rich or REC rich entity can bank those and use them
22 at a later period. There are some concerns about that, but it
23 is a viable process. Force majeure. Of course, in Florida we
24 have hurricanes and if people can't do it, then they would have
25 an opportunity to come back at a later period and make up that

1 requirement.

2 I have gone through quickly. There are some points
3 that I wanted to make particularly about the RECs. There are
4 some advantages and disadvantages to it, obviously. I know it
5 is late in the day, and I won't talk about that, but I can't
6 emphasize enough that in those instances where they have worked
7 most is where they have original based systems and they have
8 had automated tracking systems. I think most of them are
9 web-based tracking systems. In those areas where they don't
10 have an automated and/or a web-based system, they rely much
11 less on just the presence of the RECs as a verification
12 mechanism. It still can be traded, but to verify that that is
13 compliant, brings that entity into compliance, they rely on
14 them much less. There is much more work to be done.

15 Now, energy efficiency. Yes, as I indicated earlier,
16 there is a role particularly in a state like Florida. As you
17 heard earlier, we put so much of our resources into importing
18 what we use for energy. To the extent that we can bring more
19 of that in state and put more of the resource that we use for
20 energy in state, that is going to be incredibly helpful. The
21 ACEEE report you have all heard about, but as I indicated there
22 is a balancing that is required. You have to make sure you
23 keep your eye on bringing more diverse renewables market and
24 that plays into a more diverse energy market. With that, I
25 think that's it. And if you have any questions.

1 CHAIRMAN EDGAR: Commissioners, any questions for
2 Mr. Jacobs?

3 Commissioner Skop.

4 COMMISSIONER SKOP: Thank you, Madam Chair. Just a
5 quick comment.

6 Mr. Jacobs, I want to commend you for your prominent
7 use of the wind energy within the PowerPoint slide, and it
8 would be a great day late in the date for the state of Florida
9 if we could find a way to put those eight turbines that are up
10 there and distribute those somewhere around the state of
11 Florida. So, thank you again for featuring that.

12 MR. JACOBS: There was an ulterior motive there.

13 CHAIRMAN EDGAR: Commissioners, any further comments?
14 None at this time.

15 Mr. Jacobs, thank you so much.

16 Our next speaker is Mr. Cooper.

17 MR. COOPER: I guess that's me.

18 CHAIRMAN EDGAR: Is that you?

19 MR. COOPER: Yes. I have been here a long time.

20 CHAIRMAN EDGAR: Mr. Cooper, we will hear from you.

21 MR. COOPER: Yes. My name is Jeff Cooper, and my
22 presentation is in three parts. First, my introduction. I am
23 Jeff Cooper, and I am the service coordinator for Lake County
24 with our waste-to-energy facility that is owned and operated by
25 Covanta Energy. So, with that perspective in mind or

1 background in mind, that's the reason I'm here, to talk about
2 the local Lake County perspective for renewable portfolio
3 standards.

4 The second part, I think -- well, we have got very
5 few people left here. It was pretty full this morning.

6 CHAIRMAN EDGAR: But we're still here.

7 MR. COOPER: Yes. And they have just about said
8 everything three times, and I guess in sales they say you have
9 got to tell everything three times before it sinks in, so I'm
10 not going to repeat all of that same kind of stuff and
11 everything, but I would tell you that in my research there was
12 a slide up on the -- not the map, though -- a slide from the
13 Lawrence Berkeley National Laboratory by the University of
14 California. In my research, a lot of what I found out about
15 renewable portfolio standards, based on what the staff asked me
16 to talk about, there was a study done in March of 2004 that all
17 it did was evaluate the different states' renewable portfolio
18 standards. And, it was updated in April of this year. So I
19 will be glad to give that to the staff, and if you would like a
20 copy of that to look at it, it is pretty easy reading, and it
21 just has a lot of good information about what other states have
22 done, and how successful, and how well they have done. So I
23 offer those to you, as well.

24 CHAIRMAN EDGAR: Thank you.

25 MR. COOPER: And then last of all, I did have a

1 five-slide presentation, and I'm going to the last slide. How
2 about that? And that just gives you my local concerns. And
3 pretty much everything else was said before in some manner or
4 way, shape, or form.

5 First of all, from a local concern, waste-to-energy
6 wise from our perspective, we are really left out of this
7 thing. First of all, I think in the rules or the law, and I'm
8 not sure which, and forgive my ignorance here, it's our garbage
9 and we are not entitled to any REC credits. So, you know, if
10 you don't want me to play in the sandbox, I'll go to the
11 swings. Basically, we have nothing to do. There's nothing we
12 can do but sit back and say whatever you give us, whatever you
13 feed us, that's what we have to take.

14 So, before the REC credit program gets into a swing,
15 and anybody is entitled to anything, whoever generates the
16 renewable energy, assuming that you are going to continue to
17 classify MSW as renewable energy, we would like a piece of the
18 pie. Which gives us a little bit of leverage to negotiate
19 expansions, reduce our landfill usage. For example, in Lake
20 County, our waste-to-energy facility is large enough where we
21 only have an 80-acre site dedicated to landfill. And
22 waste-to-energy is a very important part of our portfolio of
23 disposal of waste for the county and everything.

24 So, how do we go about doing all of that kind of
25 thing and everything? One of the things I think is how can you

1 help us help educate the localities. And since I am the only
2 locality here, my thought is, you know, what can you guys give
3 back to us to help educate us so that more communities will
4 participate and more communities will actually come back and
5 say how do we get into this renewable energy thing so we can
6 meet the Governor's mandate.

7 I mentioned the REC credits. Getting a portion of
8 the REC credits, that would help a lot. That would help us
9 negotiate with the utilities and with the operators especially.

10 One of the other things we wish we could do is be a
11 participant in the -- when you talk about negotiating and
12 financing for waste-to-energy facilities and expansion, you
13 know, who determines the avoided costs? Why can't we
14 participate in how you determine what avoided cost is in
15 determining those capacity payments.

16 And I have just a few ideas that have occurred to me
17 and occurred to some of the people locally when we were talking
18 about this thing. If you remember back in the '90s, we had
19 waste tire grants and we had recycling grants. Well, maybe we
20 should do something like that where you have a five-year
21 period, the state is going to offer grants to get into this
22 stuff, and at the end of the five years, boom, it's gone. The
23 money is gone, it is over, and it is done with. Just like the
24 waste tire grants and the recycling grants.

25 You know, the local entities when there is grant

1 money available they really get into it, and they get into it a
2 lot. Especially in recycling. I know that there was just a
3 huge push. We had education people, and a lot of the different
4 counties have continued on with their recycling education and
5 have continued on with -- it's not as great as when the money
6 was available, but at least it's there.

7 And then we talked about, you know, some other
8 things, and you'll forgive me if this is an incorrect number,
9 but almost 50 percent of the electric usage is through
10 residential in the state of Florida, and if that's not right,
11 it's just a large number anyway. But, you know, what about
12 doing something on -- what can we do for those people? You
13 know, Lake County is a very growth-oriented county, and we are
14 growing by leaps and bounds.

15 And this is just a crazy idea, that is all this is.
16 A workshop is a workshop and you come up with crazy ideas.
17 Well, what about sometime in 2010 saying that some meters for
18 solar be included in every new construction house that's there,
19 that's built? A meter so that if the family wants to get into
20 solar energy for their home, the meter is already there. And I
21 don't know if that's even a dumb idea or what, but it's an
22 idea.

23 If I knew it was there to begin with, maybe I would
24 get a couple of extra bucks, now I can get -- and the solar
25 cost comes down and maybe now I can get into it. It's kind of

1 like it is already plumbed for solar energy type thing. So,
2 those are just a couple of things that we have talked about on
3 a local basis. We like the state incentives because of the
4 financing. And just to make it very personal, as far as Lake
5 County is concerned, we have to make a decision, our contract
6 for waste-to-energy is up in 2014. Like I said, we only have
7 80 acres for a landfill which serves just as a -- diverted when
8 they are down for a maintenance type thing, and we have to do
9 something.

10 Now, what can we do now to renegotiate that and
11 expand? And there has been a lot of talk about putting in
12 another boiler in at Lake County. Well, the capacity payments
13 right now are like 2-1/2 cents per kilowatt hour, which is very
14 good, but they don't give those out anymore. They are not
15 negotiating those. Well, maybe what we can do, and this is
16 another crazy idea, maybe what you might want to do is say,
17 well, if you offer them that same level or a greater level,
18 2.7, they can get some credit on their renewable energy to help
19 us pay for the bonds that fund that 600-ton-per-day expansion
20 of our facility.

21 So, I think if we can participate in the system, I
22 think we can make some kind of a contribution in some new ideas
23 on how to go about doing some of this and establishing a
24 renewable portfolio standard for the state of Florida. And
25 with that, I entertain any questions, and thank you very much

1 for your attention.

2 CHAIRMAN EDGAR: Thank you, Mr. Cooper.

3 Any questions, Commissioners, for Mr. Cooper? No.

4 Mr. Cooper, if you wouldn't mind taking those
5 documents over to our staff, and while you are doing that I
6 would like to say I hope you know, and that others do, that we
7 have also tried to reach out and get participation from local
8 governments in our deliberations. I thank you for being with
9 us today and helping us with that effort, as well.

10 Commissioners, we are almost done, but if you will
11 indulge me for a few minutes we have had two people who have
12 asked for just a minute or two of time, and they have also been
13 very patient. So, at this point if Jennifer Green is still
14 with us, I would like to give her a minute or two. And then
15 Mr. Kravowski is here for comments. If you can be our clean-up
16 batters, so to speak. And then I do have one or two comments
17 to close out and talk about next steps. And then,
18 Commissioners, if you have any thoughts, and then we will have
19 concluded our business for the day.

20 Ms. Green.

21 MS. GREEN: Madam Chair, thank you for your
22 indulgence. Commissioners, I will make it brief because I know
23 me and one other speaker are the only thing between you and
24 dinner, so I will make it really brief.

25 My name is Jennifer Green. I'm a partner with

1 Liberty Partners of Florida, and I'm here representing
2 Environmental Defense. They are an organization that is -- it
3 is a leading environmental advocacy group with over 500,000
4 members nationwide, and their uniqueness is that they stress
5 development of economically sustainable solutions to
6 environmental problems. They work very closely with the United
7 States Climate Action Partnership.

8 Of course, again, we appreciate the opportunity to be
9 here. We also vigorously applaud the Governor's leadership on
10 this critical issue, including his recognition that stimulating
11 the rapid growth of development of renewable energy is an
12 essential part of climate change. We also applaud this
13 Commission. You all have terribly difficult decisions on
14 energy issues that come before you, so we appreciate what you
15 do.

16 Adoption of a strong RPS, such as Governor Crist
17 called for, changes in one of his executive orders is difficult
18 because Congress has yet to react or enact a cap on overall
19 emissions on greenhouse gases. And without RPS, or a national
20 cap, we believe that renewables won't come close to achieving
21 their potential in reducing greenhouse gases.

22 We will be providing your staff with several
23 documents we are going to hand out today. I will get it to you
24 electronically. First is testimony by Mark McCloud to the
25 California Public Utility Commission about the Texas RPS. You

1 heard earlier about Texas. He is now with Environmental
2 Defense, but Mark previously helped design the Texas RPS as a
3 senior staffer for the Texas Public Policy Commission.

4 Also attached will be a 2001 report by the Lawrence
5 Berkeley National Lab on early lessons from the Texas RPS, and
6 both documents will talk in detail about some key design
7 elements. We also have a very short memo that we will include
8 about a type of renewable energy you heard a little bit about
9 today and that is on using solar and current ocean energy.

10 There are four points I will make very quickly. As
11 you develop an RPS plan, establishing an explicit quantitative
12 goal for the RPS. And we, of course, commend the Governor for
13 what his standards are going to be, the 20 percent reduction by
14 2020, include flexible compliance mechanisms, clearly assign
15 responsibility for compliance, clearly assign responsibility
16 for enforcement, and establish clear and strong penalties for
17 noncompliance.

18 Of course, given Florida -- we understand given
19 Florida's growing population and energy demand these are
20 ambitious targets the Governor has set out for you, but they
21 are vital in protecting Florida from the effects of
22 unconstrained climate change, and we think it will be
23 achievable only with a strong commitment to renewables.

24 We have a vast amount of resources Environmental
25 Defense would be happy to provide. They have been providing

1 information to the Governor's Office after the summit, previous
2 to the summit, and we would be happy to get that information to
3 you, as well. Thank you.

4 CHAIRMAN EDGAR: Ms. Green, thank you. And if you
5 would provide that information to our staff, and we will look
6 forward to seeing it.

7 Mr. Krasowski.

8 MR. KRASWOSKI: Good evening, Commissioners, and
9 thank you very much for allowing me to speak. I will be direct
10 and brief. I don't know what type of framework or timeline
11 that you are actually working on, but I notice in the
12 Governor's executive order that it states in a couple of
13 paragraphs that no later than September 1st initiate
14 rulemaking, so I am guessing that initiate means to start, it
15 doesn't necessarily mean to finish. Because this is such a
16 complicated issue, and there is so much to this that I know you
17 don't want to rush through things. Haste makes waste, and we
18 certainly don't need anymore of that. We have got so much we
19 have to burn it, right?

20 But I would like to make a few points in terms of --
21 and I'm with the Florida Alliance for a Clean Environment.
22 That is the hat I wear now. We are a real small group. Kind
23 of a think tank type of operation down in Collier County. We
24 have been active on resource management issues since 1984 in
25 Collier County, and then as our interests grew and situations

1 developed, we have been up last year, the year prior, talking
2 in front of various legislative committees, Senate and House
3 committees on environment in particular on solid waste
4 management issues.

5 And so I would like to address a few things here.
6 Here is a letter, an open letter that we sent to the Governor
7 and shared with you, as well. You all were sent a copy of
8 this. And in the letter -- well, first, if I can digress for a
9 minute. Sorry, I'm trying to get through this. We would like
10 the renewable portfolio to contain renewables. Like don't
11 start putting waste-to-energy and nuclear in with the
12 renewables, which we perceive to be solar, ocean current, and
13 wind. They can be put in another category like -- another
14 category might be efficiencies, opportunities at efficiencies,
15 but I don't think you should bundle them together because we
16 want to know as we move along what is being gained through
17 efficiencies, which doesn't require much on the part of the
18 utilities if we implement certain standards and the
19 efficiencies can be realized.

20 As an example, if we were to go with what the Florida
21 Solar Energy Center has recommended as to be included in the
22 building standards over the next seven years, incrementally
23 more and more we can achieve a great deal of efficiency in the
24 building of new houses. Of course, that's outside of the RPS,
25 but it could be kind of a component of it. So, we would like

1 to see clean renewables in one category, the highest bar, then
2 efficiencies in another category. Then, there were comments,
3 many comments about geothermal. Well, we don't have the
4 traditional definition of geothermal here, which is like
5 volcanic activity close to the surface and all of that, but we
6 do have a term that I don't know if other people use it, we use
7 it, and it's subterranean thermal transfer systems. And these
8 are very efficient in the mitigation of the energy needed to
9 air condition and heat buildings by circulating fluid under the
10 ground and using that norm, that mean temperature to work from
11 as you heat or you cool. And this is a technical thing. You
12 probably know about it already, but that should be in the
13 category, another category, you know, and things like that. So
14 efficiencies.

15 In the letter that we distributed, we requested -- we
16 attached a petition to that, and that petition is being
17 distributed and when people are done signing it in August we
18 will distribute it once again. But in order to get these ideas
19 out prior to the Governor's climate change meeting, we sent the
20 letter to the Governor and you folks. You were copied, as
21 well. And what we are asking for is a clear understanding of
22 each one of the options. We would like to see a complete
23 comprehensive profile done on every option.

24 Like we hear that nuclear is good because it is
25 minimal CO2, or CO2 free. Well, when you do a complete

1 beginning to end profile, there is a lot of carbon and fossil
2 fuels used in the mining of the material for nuclear, there is
3 a lot of emissions in the refinement of the fuel, and there are
4 piles of radioactive material left as part of that process.
5 And then at the end you still have the waste. So sometimes
6 there is an over-enthusiastic promotion of an option, and we
7 would like a real scientific analysis of all of these things.

8 IGCC coal operations are often thought of
9 automatically with sequestration technologies, which is not the
10 case now. So when we look at IGCC, you have to understand it
11 is a complete profile of that.

12 Municipal solid waste burning. We have studies that
13 show it is not the best environmental or economic option in
14 regards to handling solid waste. Actually what it does is it
15 enables our society to continue to generate waste because it is
16 easier to get rid of it, but it is very expensive and there are
17 pollution aspects to it.

18 We want a full profiled analysis of that, okay? And
19 then until those profiles are done, we're calling for a
20 moratorium on building or expansion of any of these pollution
21 technologies. We favor clean technologies. And the gentleman
22 from the solar energy center did not mention, but there are
23 many studies that are very remarkable that these people have
24 done. Good solid science. And as you know, they had the
25 comparison of their energy efficiency home to a standard home,

1 and it showed quite a bit of savings in comparison. I think I
2 touched on that already. Okay.

3 So, I could go on forever, but I won't. And thank
4 you. I appreciate my being able to get on record. Maybe I
5 could finally suggest -- once again, we don't want to rush
6 anything, and I think a study -- this isn't the House or the
7 Senate now. Senator Argenziano, you are now a member of the
8 PSC, so you don't have to worry about people thinking studying
9 something is delay, but I think if we take --

10 (Inaudible.)

11 MR. KRASWOSKI: Excuse me, I didn't mean to challenge
12 your statement. But we really have to know what we are doing
13 before we move forward. In 2003, we did a zero waste workshop,
14 and in two days brought people from California, the state of
15 Washington, from Delaware, and other people have come in and
16 analyzed Collier County's waste system. We are thinking of
17 challenging ourselves to doing something similar for, like, a
18 clean energy strategy for Florida. All of the clean energy,
19 none of the dirty stuff. Invite people in here to tell us how
20 we can do 100 percent clean renewable. Challenge them with
21 that and, of course, we will get some pretty wild ideas.

22 But the energy generated from the Gulf Stream is
23 another thing I didn't mention. So keep that in mind. In our
24 thinking about planning for such an event, it's like six months
25 out before you can bring the right people in here. You already

1 have some of the right people, but giving them time to work it
2 out. And we are planning on being involved with this for three
3 years, okay. So, thank you very much for your consideration.2.

4 CHAIRMAN EDGAR: Commissioner.

5 COMMISSIONER ARGENZIANO: Just a comment, so you
6 understand. I am not saying that we should rush into things
7 without thought or without looking into being very careful of
8 what we do, because we could make some very big mistakes, but
9 that doesn't mean we can't relook at things. My concern, and
10 in being in the legislative process for so many years, there
11 are tactics that are employed frequently, and study usually is
12 the first sign of that. And what I don't want to see is a
13 severe setback. I don't think a year is -- I think there is
14 information out there. You are giving us information, other
15 people are giving us information, and I think we can grab that
16 information now and try to do the best we can as we go along.
17 But a year to me is a severe setback and may jeopardize
18 actually getting something done.

19 MR. KRASWOSKI: Six months as well, we are talking
20 something like that.

21 COMMISSIONER ARGENZIANO: Well, I said as a minimum.

22 MR. KRASWOSKI: Delay is denial, they say that too,
23 don't they?

24 COMMISSIONER ARGENZIANO: Could be.

25 MR. KRASWOSKI: Okay. Well, I appreciate your

1 attention on my comments. Thank you very much.

2 CHAIRMAN EDGAR: Thank you, Mr. Kravowski. As
3 always, we appreciate your attention to what we are trying to
4 do here. So, thank you.

5 Okay. It has been a long day. It has been another
6 good day. A lot of information.

7 Again, let me say thank you to all of our presenters.
8 Thank you to our audience. Thank you to our staff. There is
9 more work to be done. I started off this morning saying that
10 we would be prudent and thoughtful, but yet thorough, and I am
11 going to stick to that as we go through our next steps. And
12 what we have planned in order to help us move through some of
13 these issues and work on them and find out what information
14 more we may need and how is the best way to get it, is that we
15 are going to have a staff technical workshop on August 23rd.
16 And we will ask the staff, of course, as they always do to take
17 careful notes and there will be a transcript and the record and
18 the documents. And they will be culling through that in
19 helping us to identify issues and some plans to move order.

20 So, a staff technical workshop on August 23rd. That
21 notice will go out next week. The notice will contain some
22 additional information, and then also please be in touch with
23 our staff for further additional information as to how we are
24 going to try to use that workshop to be productive and a good
25 use of time for everyone.

1 Commissioners, as always, if you have additional
2 thoughts, direction for our staff as they are culling through
3 all of that, please work closely with them. And before we
4 adjourn, are there any closing comments?

5 Commissioner Carter.

6 COMMISSIONER CARTER: Thank you, Madam Chairman.

7 I think that a perspective here is, you know,
8 everyone needs to realize that nobody gets their own way, you
9 know. We don't get our way, nobody gets their own way. We are
10 trying to do what is in the best interest of Florida. And in
11 that context, we have to do -- that is why I was suggesting
12 this morning that we are on bifurcated tracks. One is do
13 everything that we can do now based upon the information that
14 we know. We have got studies out the ying-yang sitting around
15 collecting dust, using them as doorstops and all like that.
16 And in the meantime, time is just whittling away, you know.

17 President Kennedy said it years ago, he said, look,
18 if we just make a commitment within this decade to deliver a
19 man to the moon and safely return him to the Earth, I believe
20 we can do it. Now, he didn't even live to see that, but we did
21 it and we did it with slide rules and pocket protectors, or
22 whatever you call those things. I'm not a math major or
23 anything like that, but that is because there was a commitment.

24 We have before us some outstanding legislation that
25 has been given to us from the Legislature. We have a Governor

1 who has given us a vision. We have rules and procedures here
2 in this Commission, and all of us are energized about doing
3 what we took an oath to do. And I believe that there is enough
4 opportunities for us to look at the parameters that have been
5 delineated, move forward on those parameters. President Reagan
6 said trust but verify, so we can do those kinds of things.

7 But I do think that delay -- Senator, you're right,
8 delay gets us into a mode of thinking. You can think a thing
9 to death as my granddaddy used to say, but what we need to do
10 now is we need to be moving forward. Because to do otherwise
11 is to put our grandchildren at risk, and I don't think that's
12 what we are here for. And those are my comments.

13 CHAIRMAN EDGAR: Thank you, Commissioner Carter.

14 And, again, I will note that we will have had two
15 workshops on this as a means of helping us move forward.
16 Additional closing thoughts?

17 Commissioner Skop.

18 COMMISSIONER SKOP: Thank you, Madam Chair.

19 Commissioner Carter read my mind with the quote
20 attributed to former President Kennedy about going to the moon.
21 And that was not because we do things because it was easy, but
22 because they are hard. And in that same context, a 20 percent
23 RPS is hard. It is about as hard as you can get. But, again,
24 we need to be dedicated to the task, committed to execution,
25 cognizant of the individual stakeholders and the

1 cost-effectiveness of doing this, but we need to find a way and
2 do what we can now. And, you know, there are opportunities for
3 solar, there are opportunities for wind, those have not yet
4 been fully achieved yet. And we can do those concurrently, as
5 Commissioner Carter said, with looking at some of the others
6 issues.

7 But, again, I think it is completely unfounded to
8 suggest a moratorium on things with Florida's growth rate and
9 such. We will always have a need for base load generation in
10 Florida. And hopefully, you know, emerging technologies such
11 as tidal current and capturing that will mitigate some of the
12 issues associated with meeting that base load. But, again,
13 those are far out in the future and we need to do what is right
14 for Florida, for Florida's consumers, and to protect Florida's
15 industry.

16 And, again, I just wanted to hit on what Commissioner
17 Carter articulated so well, again, because he read my mind.
18 Because I had written this down about six hours ago looking up
19 the Kennedy quote earlier this morning. But, again, these
20 things that we choose to do, we are not doing them because they
21 are easy, but because they are hard, and we need to accomplish
22 those to the best of our ability as articulated as we are
23 tasked in the executive orders. Thank you very much.

24 CHAIRMAN EDGAR: Thank you.

25 Commissioners, any other thoughts? All right.

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Again, thank you to everyone, and we are adjourned.

(The workshop concluded at 6:40p.m.)

1 STATE OF FLORIDA)

2 : CERTIFICATE OF REPORTER

3 COUNTY OF LEON)

4

I, JANE FAUROT, RPR, Chief, Hearing Reporter Services
5 Section, FPSC Division of Commission Clerk, do hereby certify
6 that the foregoing proceeding was heard at the time and place
herein stated.

7

IT IS FURTHER CERTIFIED that I stenographically
8 reported the said proceedings; that the same has been
transcribed under my direct supervision; and that this
9 transcript constitutes a true transcription of my notes of said
proceedings.

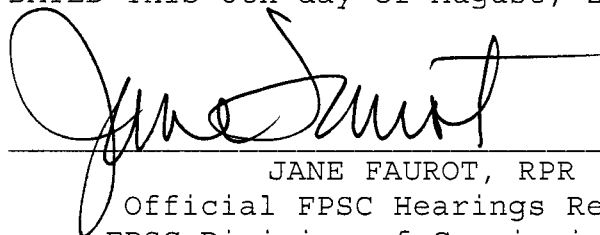
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I FURTHER CERTIFY that I am not a relative, employee,
11 attorney or counsel of any of the parties, nor am I a relative
or employee of any of the parties' attorney or counsel
12 connected with the action, nor am I financially interested in
the action.

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DATED THIS 8th day of August, 2007.

14



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JANE FAUROT, RPR
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