BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. UNDOCKETED

In the Matter of

INTERCONNECTION OF SMALL PHOTOVOLTAIC SYSTEMS; NET-METERING OF CUSTOMER-OWNED RENEWABLE RESOURCES.
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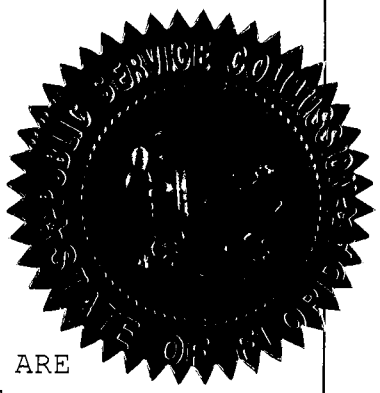

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VOLUME 2

Pages 101 through 203

PROCEEDINGS:	RULE DEVELOPMENT WORKSHOP
BEFORE:	CHAIRMAN LISA POLAK EDGAR COMMISSIONER MATTHEW M. CARTER, II COMMISSIONER KATRINA J. McMURRIAN COMMISSIONER NANCY ARGENZIANO COMMISSIONER NATHAN A. SKOP
DATE:	Thursday, August 30, 2007
TIME:	Commenced at 9:30 a.m. Concluded at 4:36 p.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	MARY ALLEN NEEL, RPR, CCR

P R O C E E D I N G S

(Transcript follows in sequence from Volume 1.)

CHAIRMAN EDGAR: Okay. We are back on the record. I hope everyone had a nice lunch. It went very fast.

I think that when we stopped off, Mr. Bryant, you were in some comments, and then we all got hungry, so --

MR. BRYANT: Yes, ma'am. The good news is, I was about to end up my comments.

CHAIRMAN EDGAR: Okay. Well, then why don't you --

MR. BRYANT: The bad news is, now both your and my blood sugar is pretty well satisfied, and I could go on forever.

CHAIRMAN EDGAR: I'm ready to go.

MR. BRYANT: All right. I talked about the practical problems with just implementing what you're trying to do with municipals and co-ops. I touched upon the jurisdictional issues. Michelle Herschel has covered those fairly well, and I will just hit a couple of those in a minute.

But I want to point out that -- please do not misunderstand that the municipal electric utilities are

not suggesting in any form or fashion that we should not be doing these things. Okay? The Commission is well aware that we're out front on the renewable source rulemaking, and we have an actual proposal. We've been talking with the Commission and the Legislature and the Governor's Office based upon essentially a certain amount of revenues dedicated to a certain renewable portfolio. So we are there, I think, in the mainstream, if not out front, on some of these issues.

But we're different. We're regulated differently. We're governed differently back home. Our elected officials are actually pushing us as the utility side of it to do these things. I don't know exactly what these things will end up becoming, but we have -- seven of our municipal utilities already have a type of net billing, if you will, arrangement, and Barry is going to talk about -- Mr. Moline will talk about that in a minute.

You heard me say, well, size, we can't do it if we're small. Don't believe that totally, because one of our smallest systems, Green Cove Springs with 5,000 customers, has now one photovoltaic customer hooked to their system on a type of net billing arrangement, the point being each of those systems is going to have to structure within the particular size and governance

provisions that it's initiated under to accomplish these things. But we are doing it. Barry is going to talk about that in just a minute.

If you just read your current rule line by line, there are problems in here with wordage that just cannot apply to us, and I'll just give you a example. Under your rules, rate structure rules that apply to the municipal electric utilities and cooperatives, Rule 25-9, Part IV, you define rate, which does not apply to us, but define rate meaning refers to the price or charge for utility service. Then when you look at the definition of rate structure in your rules, which this is all your rule as to the municipals and co-ops, how we submit our rate structures to you for your approval process, it then defines rate structure as the classification system used in justifying different rates, and more specifically, the rate relationship between various customer classes, as well as the rate relationship between members of a customer class.

Thus, certainly within the rate structure jurisdiction, as we develop these rate structures for our net metering customers, then we're going to have to bring those rate structures to this Commission for your purview, which is to make sure that they're not discriminatory to the other customer classes, et cetera.

So we cannot not do anything. Okay? We will not not do anything.

But when you read your rule, each time you see something in your current rule, almost every line where it talks about dollars and cents, rates, charges that we can and cannot have, it can't work under your jurisdiction. It will not work. So that's the reason for my trying to make you painfully aware how painful we will be in this current rulemaking.

And with that, Madam Chairman, I appreciate your indulgence. Mr. Moline will have a few comments.

MR. MOLINE: Thank you, Madam Chairman and Commissioners.

You know, Tinker Bell comes along when I speak.

As Mr. Bryant just said, the municipal utilities are pregnant with net metering. There's no question. We net meter. We have members that are doing it, and we're doing it because our customers have asked for it. And in a couple of cases, it's one or two customers, you know, potentially growing. Primarily, almost exclusively it's photovoltaics, the projects that are being implemented.

I wanted to share with you the net metering experience from other states. We've talked a little bit

about the experience of other states. But the idea of the net, where does the net go -- and the rule is suggesting a net being a payment back to customers annually. In 16 states, the annual net just goes back to the utility; in only eight states, the net goes back to the customer; and in 12 states, there's a carryover of the net forever until -- I presume until the customer ceases service. And while I don't know what happens at that point, in the case for the municipal utilities in Florida, that's in practice what's going on, is that we have carryover from month to month, year to year. And the policy would be, at the conclusion of service, then the customer would lose the net if there is a net.

There's a question on payment that -- I would like to at the conclusion of my remarks ask Mr. Futrell if he would just clarify section (8)(f). We've had discussions here at lunch, you know, among some folks in the room not quite understanding what would be included in the payments. And if we can do that at the conclusion of my remarks, which will be brief, that would be great. I would appreciate that, at your indulgence.

CHAIRMAN EDGAR: Sure.

MR. MOLINE: There was a comment about insurance damage. And one utility, Lakeland Electric,

has a -- they're the only ones that go beyond residential customers in offering net metering. And they limit the size of the system to 75 percent of the transformer bank capacity that serves the customer, in other words, three-quarters of the ability of a customer to inject back into the system. And there's a good reason for that. By the way, their limit there is a half a megawatt, 500 kW, so it's substantial in size.

But the reason why they have the limitation is because if a customer backfeeds into the system too much voltage, they could damage a significantly sized transformer, so that's why they have that limitation. They don't want to have overgeneration back into the system. Simultaneously, there could be -- if a customer does overgenerate, if a residential does overgenerate, or let's say a commercial customer in a neighborhood of residential customers, they could damage the transformers on a city block, for example.

It's not something that's insignificant or something that we should just pass off and say, "Oh, that will never happen." There's a reason for the insurance, and that is because if you do have a voltage spike, you could damage those transformers. And might it be a couple thousand dollars? Maybe. It could be tens of thousands of dollars.

COMMISSIONER ARGENZIANO: If I may, what would it take? What kind of generation would it take to cause damage to a transformer? What kind of spike?

MR. MOLINE: What kind of --

COMMISSIONER ARGENZIANO: If somebody has a solar panel on their house to heat -- a water heater, let's say --

MR. MOLINE: Well, in the case of a single photovoltaic system on a house, they could damage -- this is smaller potatoes. They could damage the service that would lead from their house to the transformer. I'm mostly talking about a business that might be in a residential neighborhood that would have a larger system. If they had a voltage spike, then they could damage either other businesses or the service --

COMMISSIONER ARGENZIANO: That's what I wanted to make clear, because I heard you say residential.

MR. MOLINE: Yes. I'm not talking about a single house. A residential house could damage a neighbor. That's about the extent of that damage.

COMMISSIONER ARGENZIANO: So a Tier 1 is really not going to hurt a transformer?

MR. MOLINE: Right.

COMMISSIONER ARGENZIANO: Okay. Thank you.

MR. MOLINE: A couple more quick points, and

that is, I just wanted to clarify -- the gentleman from down there, I haven't met him, but he was talking about a Wal-Mart installation that would generate less than Wal-Mart's load. He made the analogy to an energy conservation system, and I would agree that that, in essence, is similar. You're essentially reducing Wal-Mart's load in that example, and it looks like energy conservation.

This rule goes way beyond that example. And there's two levels of discussion we're having here. One is, we're talking a lot about photovoltaics, but the rule talks a lot -- and we had a presentation this morning from a methane digester where the economics of that project depended on the system generating back to the utility. So this rule goes way beyond that, and I think that it's important that we look at all the impacts, the potential impacts that that could happen.

What that also means is that the economics of that type of situation, the methane digester, we're concerned about those subsidies. We recognize that when we're talking about these issues that there are subsidies. We can go ahead and do it. I told you already, we're pregnant with doing it, but let's understand what the subsidies are. Let's just write them down on paper, and let's all agree on, "Yes, this

the subsidy, and this is the subsidy that we want to give to renewable providers for this service." So we're okay with going forward on it as long as we identify what that is and agree that that's an appropriate policy for the State.

And finally, the programs that we have in place, none of our municipal utility members actually make a payment. Just to clarify, they don't make a payment to customers. If they have excess generation, it's rolled over. And at this point right now, pretty much no one is rolled over yet. There is one system that's -- the Antique Car Museum down on Highway 90 and I-10, they've delayed their startup for the museum itself, but their photovoltaic system is in place, so they're actually generating. So there's a little confusion right now, but for the most part, they don't expect to overgenerate in that case.

So again, we're talking about a lot of times here PV, but this rule goes much more broadly, and we would like the issue of the subsidy to be fully identified for us to discuss publicly. And then I would like to -- I'm open for questions, but I would also like to turn it to Mr. Futrell.

CHAIRMAN EDGAR: Yes. Commissioner Argenziano.

COMMISSIONER ARGENZIANO: Thank you. First, I guess, when are you going to give birth? I couldn't help that. I'm sorry. Okay.

CHAIRMAN EDGAR: And when will they be walking and talking? That's kind of what we want.

COMMISSIONER ARGENZIANO: I guess that "very pregnant" got me several times.

I guess this is more for staff. I would like to know the subsidy issue, because I've heard a couple of different things on that, and I would really like maybe staff to go into that in more detail so I have a good understanding if there is a subsidy or if there isn't, and where. Thank you. And congratulations.

MR. MOLINE: We'll send you the birth announcement.

CHAIRMAN EDGAR: Mark, can you speak briefly to the points that the Commissioner has raised, with the understanding that we will be having more discussions about this? And also, I think Barry had asked that you comment on a point.

MR. FUTRELL: Sure.

CHAIRMAN EDGAR: Thank you.

MR. FUTRELL: On the subsidy issue, certainly when rates are set, they're based upon the costs identified to serve the customers' needs, and then rates

are set assuming that those -- based on the assumption that the utility will meet its revenue requirements to meet those costs.

When there's some sort of reduction in the kilowatt-hours that are used or generated and purchased by the consumer, then there is some reduction in the contribution to revenue requirements. And if it becomes a significant number -- and that's one of the questions that -- we would like to have some discussion today about at what level does its become a real concern. A customer who may net meter may not make its full -- its contribution to fixed costs that it was intended to under normal conditions, and so those costs would have to be picked up by other customers to meet the revenue requirements of the utility. And the question that we would like to get a better understanding of is, when does that become a real problem for the utilities? Is there a level where up to a certain level it's not as big of a concern as others, and what magnitude is that? And that's something we would like to have a better understanding of as well.

COMMISSIONER ARGENZIANO: And I think that's important to know, and to make sure that it's accurate. But -- I guess my question may sound dumb, but I don't know how else to ask it. If we're on a quest to build

our energy grids to provide -- to make sure that we have enough energy in the State of Florida for consumer demand, especially looking out in the future, then is it futile to have people -- I'm sorry. I know I have a deep voice. I have to basically lean over.

Is it futile then to have people want to retrofit homes with either solar or any other energy device? Because at some point, when the -- if it got so expanded that the population were all using an energy -- creating energy on their own through whatever mechanism, then we would be crippling the utilities. And at what point is it -- I mean, are we working against ourselves in trying to promote -- I mean, I would like to see people do more energy conservation. I would love to have solar panels on homes, and so on and so on. But by that explanation, then we are dipping into a pool, which, of course, then there will be a limited amount of people who are paying into that pool.

So I don't know if we're not -- are we just butting heads until we get to a certain point, and then say, everybody else -- anybody who has gotten in using energy equipment, energy generating equipment in their own homes, now everybody else stop? It sounds like it's contradicting.

MR. FUTRELL: Well, again, it gets to the

magnitude. Certainly it seems like even with conservation, it applies to conservation. If you just on your own put in a compact fluorescent, you're reducing your kilowatt-hours you purchase, so at some point, there could be an issue that causes -- it goes across with all these types of issues. The question is, where is the tipping point, if you will, that it becomes an issue where rates have to be looked at?

COMMISSIONER ARGENZIANO: Well, Madam Chairman --

CHAIRMAN EDGAR: Yes.

COMMISSIONER ARGENZIANO: And I don't know that it would ever get to that point. I don't know that the mass of the citizenry would actually all do that. It may at one point decades from now. I don't know. But perhaps that would -- I guess if the smaller pool of people who are not generating electric at home are still with our utilities, they would be paying a higher cost. And if they got to that point, I guess then that would be the tipping point for them to want to be generating electric at home, and then what happens to our utilities? It's strange.

And I had to discuss it, because I'm trying to figure out at what point is it not contrary to want to have more conservation and more energy generation. And

if we need more energy generation, as we don't want to wind up like in California, why would we limit or stifle that generation?

Thank you, Madam Chair.

CHAIRMAN EDGAR: Commissioner Skop.

COMMISSIONER SKOP: Thank you, Madam Chair. I think Commissioner Argenziano raises a very good point. And I think listening to the feedback and input that has been solicited to the Commission this morning, it seems that there is that fine line between what is acceptable in terms of net metering and the number of type megawatt systems that would come into play.

At least on a distributed basis for home use, I would think there would be a high probability to the extent that any electricity generated through solar or wind or renewable sources would likely be used in full or consumed by the household residents. But when you get into larger applications, such as has been suggested, there becomes a slight chance, a bit, at a larger generation capacity, that you could potentially leverage and capture what would not be otherwise available to a wholesale generator under the auspices of net metering. So I think that, you know, staff in setting the one-megawatt criteria has put a lot of thought into that.

But again, you know, there are other avenues that we're looking at in terms of renewables. I mean, the utilities, the IOUs have to put out a standard offer contract that, you know, is priced at avoided cost. And as Mr. Moline has mentioned and some of the other proposals have put forth, how do you incentivize the addition of renewables and bring those into the state?

But there are other mechanisms, and I think the net metering is more perhaps properly geared towards residential applications than distributed, and also, too, for industry. But there becomes that point to where I think that, as the utilities have postulated, that there could be a propensity to arbitrage a price differential, and I think Progress has kind of articulated that and hit that on the nail.

So again, I think that we need to give some due consideration, but I think that -- and I don't want to speak for the represented utilities, but I think that there's a sense of comfort with doing this on a small scale basis. But as that number creeps forward into the Tier 3 category, suddenly it warrants closer scrutiny or consideration of what is the impacts of the cross-subsidization problem, if it rears itself. So I just kind of wanted to add that to the discussion and let it continue down this path, because I think we're

getting some good constructive feedback from all the stakeholders.

Thank you.

CHAIRMAN EDGAR: Mr. Shirley, did you have some comments for us?

MR. SHIRLEY: I just wanted to generally say that this line of questioning and discussion is really important, and it's important that you also cast the numbers in the appropriate time line. The sort of avoided cost concepts that are built into this rule are really short-run marginal cost avoided cost, and the questions from the Commissioner really go to the long-run marginal cost questions, because the savings to the utility and the consumers of avoiding future power plants is the right question to be asking in terms of what's the effect of adding this kind of generation.

That's a slightly different question than what you do with net metering. And I guess it's somewhat unfortunate that the rule is constructed to have interconnection and net metering in the same box, because they're really two different phenomena, and there may be good values for distributed generation that yields long-run marginal cost avoided cost for the utility, which you may not want to net meter, but you want to pay that long-run avoided cost for.

So you just have to be careful that you're doing this analysis in the right set of reference points. That's really all I wanted to say.

CHAIRMAN EDGAR: Thank you. Commissioner Skop, follow-up.

COMMISSIONER SKOP: Thank you, Madam Chair. I just wanted to touch on that point just briefly. Can you reconcile that statement against -- staff has proposed the rule be one megawatt, and there has been some advocacy here for a higher number. But moreover, in terms of the -- you mentioned the long-run avoided cost versus the short-run avoided cost, looking at the different perspectives. Again, I think that this isn't really on a long-term basis, or a short-term basis, for any matter, going to displace the need for additional base load generation with within the state.

We have an expansive growth rate in the State of Florida. And to the extent that we're able to add renewables, that's great, because that is a good thing to the extent that it displaces fossil fuel generation and such. And net metering is, I think, a good thing in principle. But in terms, you know, of the long-run avoided cost of building future power plants, I'm not able to reconcile that, given our growth rate. We're adding new combined cycle or new power plants every two

years, depending upon which service area you're in.

So can you elaborate a little bit more in that regard about the statement that you made in relation to that, as well as staff's proposed recommendation that Tier 3 should be capped at one megawatt? Thank you.

MR. SHIRLEY: Sure, Commissioner. I think the conceptual problem here is, it's hard to think of two-kW solar systems displacing 300-megawatt power plants. And you're right, they don't in an instantaneous sort of sense. But what they do is, as you add more small pieces of -- let's just call them demand-side resources. This really applies to energy efficiency as well as to customer-owned generation or customer-sited generation. As you add those, in essence, you push out into the future the time when that next power plant needs to come online, so there's a time value concept that you need to capture in that calculation.

And thinking of it in terms of avoiding the power plant really isn't quite right. It's usually more about deferring power plants. And in a lot of states, frankly, the high growth states are looking at combinations of distributed generation and energy efficiency, where their targets are really to eliminate growth completely, at least in the next decade or two.

So it may seem insurmountable when you're

sitting here in this high growth situation and you're adding these power plants on a regular basis. But when you sort of run the numbers and you look at what's achievable in terms of combining these kinds of resources with efficiency, you can make serious impacts on those growth rates, and then you start to really garner the savings of avoiding or deferring these power plants.

The point is that when you do the calculus for avoided cost, that's the way you should be doing it. I'm not concluding what the answer is, but rather just trying to keep you back in the right framework of analysis.

CHAIRMAN EDGAR: Commissioner.

COMMISSIONER SKOP: Thank you, Madam Chair. Just as a follow-up on that same line, again, I think net metering is a good thing in principle. Again, I think that each of the stakeholders has brought forth some constructive input into the process.

But with respect to the comment that you just made, looking at net metering and demand-side management and conservation measures, I mean, certainly wouldn't time-of-use, or adopting time-of-use metering more efficiently shift or flatten the demand curve to the extent that you could defer the building of additional

base load power generation plants? I guess what I'm getting at, under the net metering, the burden goes -- if it's used to arbitrage the pricing differential between a wholesale generator and paying, as the utilities have mentioned -- again, there's a cross-subsidization problem, depending upon the order of magnitude.

And again, I think what that gets to is, that's subsidized by the general body of ratepayers, whereas if you were to adopt time of use metering, that makes each individual consumer -- it makes each individual consumer make a conscious choice about when to use electricity, thereby flattening, theoretically flattening the demand curve, and puts the burden on the individual consumer instead of on the backs of the regulated entities to make that choice. So I just kind of wanted to kind of distinguish that or flesh that out a little bit more.

MR. SHIRLEY: I think there's a fundamental assumption we all have that in the long run, none of this really gets set on the backs of the utilities. There may be lag periods where between rate cases the utility may feel the effects of this absent some decoupling mechanism. But every time they have a rate case, essentially, you add up all their costs and you

divide it by the sales, and that gives you the price. I mean, that's the fundamental way prices are set for utilities.

So I think this question -- the threshold of net metering, how high you want to go, there's no clear answer to that. It's a judgment call. I think, you know, one megawatt, two megawatts, maybe even ten. Some states have gone to ten megawatts. Those are not unreasonable numbers, and I don't think they create huge dislocations in the utility system, at least at the penetration levels you're likely to see over the next five to ten years. And you can always revisit these questions if you see more deployment of these resources than you expected.

But that's really why I made the comment about combining the interconnection with the net metering. The net metering is about creating incentives for particular kinds of resources. But separate and apart from that is the question of when do you want to use these kinds of resources to avoid costs, whether they're distribution, transmission, or generation costs. And those may have special circumstances, geographic circumstances. Where you have a congested area, distributed generation may be a great solution to avoid or defer transmission upgrades or transformer upgrades

and so forth.

And again, these are usually valued in a time value kind of sense. It's how long can you defer that investment that creates value for the other customers from the system, if you will.

COMMISSIONER SKOP: Just as a follow-up to that, I think what you just raised raises actually either interesting point. When you talked about congestion and the need for distributed generation, you know, that could potentially inure to a given utility's benefit should they have the need for it. So perhaps, you know, noting that staff has proposed a one-megawatt cap, I mean, maybe there should be some flexibility on a case-by-case basis to allow a regulated utility to either accept or reject a proposal that would be a higher capacity based upon their needs and the value that that might bring to their system, if you will.

Is there any merit to that, and could perhaps the utilities chime in on that?

MS. CLARK: Yes, Commissioner. I would say that that is one of the things that would be looked at in a negotiated contract, that under the standard offer rules and under your rules, you encourage negotiated contracts. And if that were the situation, where it provides more value because of where it's located or

when it provides energy, that gets taken into account in those negotiations.

MR. TOTH: Excuse me, Madam Chair.

CHAIRMAN EDGAR: Yes, sir.

MR. TOTH: Yes. My name is Bill Toth, and I'm with All Source Energy from Bonita. And there's -- I've been listening to this discussion, and there's some basic mathematics that we're all overlooking, I think.

If you look at your standard family home, there simply isn't enough square footage facing the right direction to produce maybe 50 percent of their needs. So there's no way that your average home is going to be receiving money unless the technology for -- and I'm talking about photovoltaics here, okay, just photovoltaics. The math isn't there. The square footage isn't there, so you're only going to be producing a portion of the required energy to run your house. You're never going to be the point where you're putting energy back into the system on a payback rate. You may put a little back during the peak period, but you're never going to produce enough. The square footage isn't there.

That's pretty much true also for commercial. If you're looking at a two-story, let's say, office building, there's -- the math is not there. They're not

going to be producing enough energy to be getting paid for it. Now, maybe if you had a warehouse that was not air conditioned and the lights were off all night, a very large warehouse, then you may actually be getting a payback from that. But if you're running an office building, it just -- the math isn't there.

CHAIRMAN EDGAR: Commissioner Argenziano.

COMMISSIONER ARGENZIANO: Are you referring only solar photovoltaic?

MR. TOTH: I'm sorry. What?

COMMISSIONER ARGENZIANO: Only to -- are you referring to the use of solar photovoltaic only?

MR. TOTH: Yes. Yes, I am.

COMMISSIONER ARGENZIANO: Only?

MR. TOTH: Only -- I'm only talking about voltaic, yes. I'm not talking about some of the other -- ag, methane, or other things.

COMMISSIONER ARGENZIANO: But if there were a combination of other mechanisms in that office building you're referring to --

MR. TOTH: What other mechanisms are you talking about?

COMMISSIONER ARGENZIANO: I'm not sure. It depends on the size of the office building.

MR. TOTH: If they were to do energy

efficiency measures that would reduce, you know, by 50 percent their energy needs, they might be at the break-even point.

CHAIRMAN EDGAR: Commissioner Skop.

COMMISSIONER SKOP: Thank you. Touching on Commissioner Argenziano's comment, I think one possible scenario, depending upon the location, might be where you have solar during the day and also wind, taking advantage of potential perhaps sea breezes at night, and then you might be in an opportunity where that might -- you know, I think that is an example that is hypothetical in part, but --

MR. TOTH: That may be in other parts of the country, but it won't -- not in Florida. The wind is -- the wind power isn't there unless you're offshore.

COMMISSIONER SKOP: Okay. I would beg to differ, but again, I won't get into that discussion. Thank you.

CHAIRMAN EDGAR: All right. Mr. Keyes, did you have a comment?

MR. KEYES: Sure, just two things. One is, the only -- you're right that there isn't the roof space available. The only times I've seen residential systems that come close to meeting their own load is when they have, you know, a back 40 and they've got a big solar

array back there. Then you can do it.

And a good rule of thumb that I generally use just to kind of picture how big these systems are is that you can get about a watt out of a square foot. It depends on how efficient your systems are, you know, if you're using really high efficiency cells or lower efficiency. But just as a general rule of thumb, you can get a watt per square foot, and if you know an acre is 43,000 square feet, so that's like 40 kW in a square acre. That's about as much as you can hope to get. You'll probably get less than that. And so when you're talking about a 250-kW system, you're talking about six acres or a little more.

CHAIRMAN EDGAR: Thank you. Yes, Commissioner.

COMMISSIONER ARGENZIANO: I think an acre is 43,560.

MR. KEYES: That's the number. I was close.

CHAIRMAN EDGAR: Okay. I want to make sure that we -- I try very hard to get to everybody, so, Mr. Christian.

MR. CHRISTIAN: Thank you, Commissioner. Commissioner, Dave Christian on behalf of Verizon. And I'm the only communications representative, I believe, in the room, so I'm a little bit outnumbered.

But I wanted to let you know some of the interesting things that we're doing to take responsibility for managing the environmental effect of operating a global 24-by-7 business. We operate thousands of vehicles, occupy millions of square feet of real estate, and consume a significant amount of energy to keep our networks running. Whether it's through conserving energy, recycling, or finding innovative technological solutions to environmental challenges, we are committed to being a respectful, responsible, and positive influence on the environment in which we operate.

I believe you have a packet of materials, some slides in your handouts, as well as a report that provides a lot more detail than the couple of minutes I'm going to share with you today. But I would like to point out that as a result of to our energy conservation and waste prevention and recycling efforts in 2006, Verizon reduced our greenhouse gas emissions on an average by 334,000 metric tons. That's equivalent to 60 passenger cars not driven for one year, conserving over 34 million gallons of gasoline, and growing more than 7,500,000 trees for ten years. So those numbers add up for a corporation the size of Verizon.

Why do I bring that up? In Florida, we're

going to be doing our part here in that conservation effort and energy conservation effort. We are building right now a 25-kW solar array to power one of our central offices in Tampa. We expect that actual production is going to average between 19 kW and 21 kW for a five-and-a-half-hour day. We've estimated the savings based on just our energy bill, but we think with net metering, what this will do is incent companies like Verizon to do even more with alternative energy sources.

And I encourage you to read our materials, because we have a lot of things going on that are very interesting in this effort.

CHAIRMAN EDGAR: Thank you. Mr. Jacobs.

MR. JACOBS: Thank you, Madam Chair. My name is Leon Jacobs. I would like to offer just a few comments on behalf of the Southern Alliance for Clean Energy, which is a nonprofit, nonpartisan group focused on clean energy.

First of all, I would like to echo some of the comments that have been made by Florida Municipal that there are in practice and in place already net metering programs which those entities have looked at and vetted and found to be more than adequate for their needs, which suggests to me that this path is not such a trepid, fault-ridden policy approach.

In fact, I believe JEA and Lakeland, and I believe Tallahassee, all give credit back at full retail levels, not at a level below that. I agree with the statement by Mr. Moline that they do not actually make payments, but they give credit back at the full retail rate. They each adopt the practice of looking at those statements monthly and making those credits monthly, although they do do the 12-month approach. So we're not shattering any real taboos here.

And it's important to remember that there are customers out there who are willing to take it, albeit not as many as we would like. And I think your question, Commissioner, about whether or not we can do more to educate the public on this is a very appropriate question, and I would suggest to you that that's a very real part of what you want to look at in this initiative.

Now, let's talk a little bit about the subsidy issue. And I'm going to try to keep my comments to the net metering, as you suggested. And the point, I think, that was brought out by Mr. Futrell is a very important point, and by Mr. Shirley. This has to -- if you want to address subsidies, you cannot do it on a short-run marginal cost approach, because it will always seem as if you're imposing an undue burden on the system, and

that is not what net metering is intended to do. Net metering is intended to incent people to take on these technologies for the long term, to keep them for more than six months or a year, two years, five years, whatever the life cycle for these technologies are. And so I think you do yourself and you do the state a disservice if you a formulate policy on this based primarily on short-run marginal pricing.

And in fact, I think what you may find is what maybe others are finding, I think what I've heard the City of Tallahassee has certainly found, is that when you do this effectively and you do it with effective customer outreach, your long-run costs are going to go down. And so what you may actually find out is that you're going to have more systemwide benefits, and there will be no subsidies. I can't state here today that that is the case. I think there's merit to the position that the companies raised, but I think it's something that you've to look at from a fairly objective point of view.

But I want to narrow in on one particular cost that I don't think I've heard much today, and that is the cost of transmission. In all of your deliberations now, you're looking at a whole range of topics now that are going to have impact on the transmission grid in

Florida, more specifically the idea of putting two or three new nuclear plants on the grid. I know this is a controversial subject, and I bring it up at some level of question.

But this whole idea of location on marginal pricing is a question -- what that means is, at peak when there's grid congestion, whether or not a user on the back end of a congestion point pays a premium to negotiate the grid. I don't know whether it happens or not. I can't say that it does. But I would suggest to you, to the extent you begin to have a more congested grid, the pressure is going to increase significantly pricing wise for transmission. It's a price we rarely see, but I guarantee you, moderate to large users feel.

And what you just heard is one user who says they want to manage those kinds of costs, and they would like to look at this provision as a way to manage those costs. And my suggestion to you is that a really important aspect of your policy development here ought to be to address that particular point of view. If they want to manage those costs, they ought to have this as a vehicle, and to not do so I think really narrows and constricts a lot of the impact of what you could have with this policy.

And I suggest to you that to the extent you do

that, you begin to send more constructive signals to the market. I suspect that the companies will begin to see positive effects of this, i.e., they'll begin to see the cost of serving their peak loads impacted. I can't say how or to what degree, but I suspect you'll begin to see that.

And I'm not talking about load shifting. I'm saying actual long-term costs of serving their peak load. I think you were getting at that, Commissioner Skop. And I don't know. I can't answer your -- give you an answer to your discussion about what flattening the load would do. But I think -- I don't know that that's territory we don't want to approach, and I think you've got to come up with an answer. And if the answer is certainly that it won't help that, then so be it. That's the answer. But I think there's somewhat of an impact.

And then finally, I would suggest to you that -- this is really kind of a minor point, that -- I think it was brought up early that there's really an opportunity here for consistency across some of the other issues that you're looking at, the renewables, and maybe even cap and trade, that you want to make sure that what you do here is consistent, i.e., if you're going to put in metering here -- and I see in the rule

that the company is really going to choose the measuring technology.

All I'm just suggesting is, ensure that it's consistent so that if there's a technology put in for net metering, it can effectively address people getting credit for -- getting their RECs measured and effectively putting those back into the system. You don't want to remove the opportunity for that to happen. I don't know to what extent there will be, and what I'm hearing is that there may not, but I think there will be. I think you'll see that there's opportunity here for some parallel policy making across those areas.

CHAIRMAN EDGAR: Thank you. We are going to need to, I think, move on, because I still do want to spend some of our time on the earlier part of the language of the rule and make sure that I provide the opportunity for additional comments. So, sir, would you like to speak to the net metering portion?

MR. STRAWN: Yes, please.

CHAIRMAN EDGAR: Okay.

MR. STRAWN: Mr. name is Lawrence Strawn, and I'm with the Orlando Utilities Commission. I'm in our rates department.

I would like to speak to -- one of the topics that has been brought up here is that photovoltaics

offsets the energy requirements of customers. I agree with that statement. It's a positive thing for the State of Florida, in fact. But I think there has been the implication that it also offsets the peak requirement of the utilities, and I would respectfully disagree with that point.

Speaking for our utility and for other utilities in the state I think I can speak to as well, we alternate -- we seem to alternate year in and year out from being a winter peaking utility to being a summer peaking utility, and it's generally about every two or three years that we peak in the winter. And when we do peak in the winter, those peaks occur at 7:00 or 8:00 in the morning when the sun is barely over the horizon or just over the horizon. And at those times, photovoltaics are going to be inconsequential, simply because the sun is not up. So we will have the -- we will not be able to delay the siting of new generation, because our peak will still be there.

So photovoltaics, in a sense, is additional generation, not offsetting generation. And by having fewer kilowatt-hours to collect the cost of that generation over, I'm afraid it pushes a subsidy on those customers who cannot afford or who rent -- we have quite a high percentage of our customers who live in

apartments, who simply don't have the option of putting photovoltaics on their home.

I thank you for your time.

CHAIRMAN EDGAR: Thank you. Mr. Krasowski.

MR. KRASOWSKI: Thank you, Madam Chair. I very much enjoyed this conversation and learned a lot. It's great that you're dealing with a lot of these issues. I have all sorts of notes, but I'll try to be brief.

I think from my perspective, there's a specific objective we're trying to achieve, and that's to provide safe energy at a reasonable cost to the customers of Florida. And this is the Public Service Commission, and "public" is the super big word, and from my perspective, is serving the public here. And I just totally agree with the implementation of net metering.

Maybe we have a couple of issues going here right now, though, as others have mentioned. Maybe the net metering is one issue, and then small generators of additional energy could be another category. But as far as net metering and displacing the use of the existing provision of energy through energy generation on location is what we should be focused on here and not so much the excessive generation. That should be another issue. Okay?

The site generation provides for reliability and security, and it also -- I think another issue we're very much interested in is the reduction of CO_2. So to the extent that wind or solar can do that, we should, I believe, move forward with net metering for that purpose and once again set aside larger generators for another day.

Besides this, there's a specific issue I would like to raise that's a bit off field here, but I think relevant to the first paragraph, and that is the wording in line number 4 that identifies that we are particularly interested in photovoltaic and wind energy systems, as somebody has suggested, to diversify the fuel type.

Now, my concern here -- and I agree with this, but I think we should be more specific and instead of saying particularly interested, I think we should specifically identify what we're talking about. And what I've heard other people mention was methane capture, which is, I think, very excellent.

But in Florida, the incineration of municipal solid waste under law is considered a renewable resource. And I just would hate to see this rule here be used by someone justify what has been previously identified as McPuffs. And that's a proprietary --

there was a day when one of our fast food vendors was going to burn their waste on location and generate some energy from it, or at least get rid of their waste. And there are small portable generators of electricity that can run on waste, and small waste burners are -- and I'm talking about municipal solid waste, not just wood or other waste products, but I'm talking about mixed garbage.

So I would be concerned that unless it was excluded, that as a renewable source of energy, that burning garbage in small locations and in small amounts that don't fall under regulations that the larger incinerators do for air emissions, that they might somehow work their way into this program.

So I would just suggest that we get more specific exactly what we're talking about as far as what technologies -- and you can always expand it later if something new comes along -- and also more specific in terms of the size of the facilities. And maybe you could have some sliding scale that would identify an allowable size of on-site generation that matches the previous need for energy at that location, from a house to a big box store.

Thank you very much for your opportunity to address the group.

CHAIRMAN EDGAR: Thank you, Mr. Krasowski. I appreciate your suggestions as well.

Okay. Let's go ahead -- we had some discussion earlier about the interconnection portion of the rule, but I would like to go back to that and open it up to hear comments from those of you who would like to speak with us and have some suggestions. And I'm trying to kind of keep an eye on the clock too, so I don't want to cut anybody off, but again, I would like to leave some time at the end of that discussion to see if there are other general comments.

So, Mark, do you have anything to kind of get us started as we shift gears?

MR. FUTRELL: Just that again some of the -- the idea with the interconnection rules, to begin to focus on expediting the interconnection process for these smaller systems to help encourage and make it easier for them, shorten the process, give some definitive time lines on when the utility has to get back with them and process the paperwork, also establishing standards for the interconnection and for the inverters if they're required. And we've also got our tiers that we've talked about. Many of the other provisions are similar to our existing rule. And then we've talked this morning about the insurance issue.

CHAIRMAN EDGAR: Thank you. Okay. Susan.

MS. CLARK: Madam Chairman, first let me introduce myself. I neglected to do that and let you know who I was here on behalf of. My name is Susan Clark. I'm with the law firm of Radey, Thomas, Yon & Clark. I'm here on behalf of the IOUs. That would be Florida Power & Light, Progress Energy, Gulf Power, and Tampa Electric Company. And as I said earlier, we do have technical people here to answer questions of a more technical nature.

Madam Chairman, I guess I'm curious. Do you want me to go through sort of and touch on those comments or ideas we had on the interconnection part, regardless of the subsection?

CHAIRMAN EDGAR: That was my thinking.

MS. CLARK: Okay. I'm just going to go through them quickly, with the understanding that we will be able to file written comments --

CHAIRMAN EDGAR: Yes, ma'am.

MS. CLARK: -- and give them to you then.

Let me just talk first about the definition of customer-owned renewable generation. We are suggesting adding something like, at the end of the sentence, "that can be connected to the utility's distribution system using a utility-interactive inverter as specified in UL

1741."

Let me tell you, there's a couple of purposes in that. It's important that it address the distribution level as opposed to transmission. You get into more issues if it is at a transmission level.

With regard to the inverter, it's important that it be a utility-interactive inverter, because there are apparently what's called stand-alone inverters, and the problems with them, with the stand-alone, is that they do not have the capability to disconnect from the system, and therefore island that customer when the grid goes off. So you need that capability for safety purposes.

We're also suggesting a change to the definition of gross power rating to suggest an addition of, after "facilities," "measured in kW," and then in parentheses, "at unity power factor at the point of distributed resource connection, as such point is defined in IEEE 1547." And that, we believe, is needed for clarity and consistency with that IEEE standard. It tells you where that needs to be.

Turning over to what is now subsection (3)(a), you see the words after -- at the end, "as applicable." We believe those words should be deleted, because IEEE 1547 and UL 1741 should be applicable in all instances,

and to suggest that they may not be by putting "as applicable" would be incorrect.

Turning over to subsection (c), we had a concern there about the prohibition against requiring further design review, testing, or additional equipment. It seemed inconsistent with a later section that dealt with the utility being permitted to require extra studies. And if those revealed the need for additional equipment, that ought to be -- you ought to be allowed to require that. And it was just an argument of consistency.

I'm going to skip the ones that I think are just drafting clarification and give them to your staff.

MR. TRAPP: Could I ask you a clarifying question, a very technical clarifying question?

CHAIRMAN EDGAR: Sure. Mr. Trapp.

MR. TRAPP: Commissioner Clark, when you address in your written comments the provision that you're questioning about measured in kilowatts at unity power factor at the point of interconnection --

MS. CLARK: Yes.

MR. TRAPP: Would you please address in your written comments whether that is consistent with the power factor at which utilities are delivering power and that we're not creating any extraordinary criteria for

the net meterer that the utility is currently not complying with, because unity power factor is pretty tough.

MS. CLARK: Madam Chairman, we will.

MR. TRAPP: Thank you.

CHAIRMAN EDGAR: Mark.

MR. FUTRELL: Thank you, Chairman. And I also have a technical question on the question you raised as far as the utility-interactive inverter. And could you explain -- walk us through the need for that type of equipment? As I understand it, for photovoltaic systems, they require an inverter to convert the power from DC to AC to be used with the customer's appliances, and also to be used on the utility's system if there's any backfeed. You're suggesting that this would be applicable to all renewable generation regardless of whether it's a PV or a non-PV, as I understand it.

MS. CLARK: Well, you know, the utility-interactive inverter has application to those that don't have a rotating engine. And as we have indicated previously and will indicate in our comments, where you do have a reciprocating engine, you have more issues with regard to feedback into the system, and that was the reason for limiting it to the inverter. We will address those in our comments.

MR. FUTRELL: And you mentioned the issue of islanding. How does that square with the requirement of having a manual disconnect switch, and how do those two relate to each other?

MS. CLARK: Well, I think the islanding is something that has to happen automatically, and the manual interconnect is when you're working on it or somebody is out there, they can disconnect it. But it needs the capability of islanding without human interaction.

MR. HINTON: So if the inverter utilized by a renewable generator, a PV system, if that had the ability to island, then would you no longer need this utility inverter?

MS. CLARK: As I understand it, when you describe it as a utility-interactive inverter, it will do what it needs to do as far as islanding. If it is stand-alone, it will not do it.

Commissioner Argenziano and Commissioner Skop, we heard you on the insurance. I can tell you that in the workshop that your staff had, what we heard from the photovoltaics providers is that the liability insurance was not an issue, that it was covered by homeowners. But we did hear your question as to whether or not having that kind of facility increases your premium.

And also, looking at the issue of the distinction between what you might require for a residential installation as opposed to a commercial, I think certainly on a commercial installation, the opportunity for liability or accidents either affecting another's property or another person are greater than residential, and there may be a reason to draw that distinction as well, and we will cover that in comments.

CHAIRMAN EDGAR: Commissioner Argenziano.

COMMISSIONER ARGENZIANO: And that was my point earlier when I said that I would think that the larger facilities would be looking at that liability, and I didn't know if it was already part of a liability package that's offered by the insurers or not. And for a farmer, even a larger farmer who's nowadays in Florida living day by day, when it comes to Florida ag, even though you all should eat Florida food -- excuse me. That comes with just -- you should. But my concern is, would it put an extra premium on that individual, even maybe a smaller farmer who still has the liability issues?

MS. CLARK: We understand that it doesn't, but we're going to find out.

We have some suggestions -- I'm now over on subsection (6) regarding time lines for the Tier 3.

Studies are necessary in that instance, and we have some suggestions on those time lines and reasons for them which we will give.

Madam Chairman, I would characterize the rest of our comments as being more clarification in nature, and in the interest of time, I will be happy to provide them in our written comments to staff.

CHAIRMAN EDGAR: Okay. Thank you. And of course, for any comments that we would like in writing, but I obviously would like to use the time while we're all gathered together primarily for those comments that might be most helpful for us to all hear together and to discuss. So thank you for your comments, Susan.

Mr. Keyes, did you have comments on interconnection?

MR. KEYES: Thank you.

CHAIRMAN EDGAR: You're welcome.

MR. KEYES: Just a few. In most interconnection standards, there's some sort of screening process that allows the utility to step through how many systems are already on the line circuit, line section, what's going to be the voltage effect, is this in a network area. Networks are more sensitive to having load on them. There's a number of screens. And I would assume that the utilities would

want that here as well. In 99 percent of the cases, when you're talking about a smaller solar system, they just fly through the screens. But for that oddball system, you would like to be able to have the -- the utility to have discretion to be able to say, "No, not that system."

So, for instance, looking at page 5, line 4, or 3 and 4, it's saying that an agreement will be executed by the electric utility within 30 days, or 60 days for Tier 3. It doesn't say anything about you can't -- you know, there are situations where you're not going to approve the agreement. So you need to give the utilities some discretion to be able to set the standards even for the smaller systems.

And I'm sounding like a utility advocate, but we all -- all three of us actually came from utilities, and it's bad for the industry to have the standards such that you can have fly-by-night companies come in and set up bad systems and the utilities can't do anything about it. It would just give the industry a black eye. So there should be some sort of screening mechanism. And you'll get the opportunity, I'm sure, with Wayne to be able to go through the different models that do those screens.

Let's see. This is a somewhat minor note, but

on page 2, when we're talking about the IEEE 1547 up on line 4, I've been told by engineers that 1547 does not include 1547.1, which is the new standard that goes over testing procedures, and you would want to have testing procedures included in there too. Most of the new standards go through that.

And on -- let's see. On the visible load break disconnect on page 4 -- I will quickly get over my head if I go in too deep on this, but in essence, the inverters have a disconnect to them, so they detect when the grid goes down and automatically shut down. And in most circumstances, there isn't a need for a separate disconnect, and we'll address that in our comments.

So it's -- it's useful in synchronous generators. For an asynchronous generator using an inverter, like a photovoltaic system, which is going to be most of the systems that come under this rule, you don't really need to have a disconnect switch. In some ways, it seems like a silly thing to debate forever and ever, because you're only talking about up to a few thousand dollars when you're on a million-dollar system, but it's just a stupid thing to -- a stupid extra thing to require.

And finally, I talked about insurance before, but let me make one other point on that front. As the

tiers are set up now, you have the second tier ending at 100 kW. If you do accept the approach of a 250-kW cutoff for insurance, it might make sense to have the Tier 2 go up to 250 kW.

And getting on to the point of searching through your insurance policy to figure out whether your general liability insurance covers you or not, I would be really surprised if there's any insurance policies out there now that specifically exclude photovoltaics.

But I've gone through the pain of looking through my insurance policy, and, yes, there's an awful lot of exclusions in there. And I can imagine a few years from now when there's a lot of solar systems some bright insurance person saying, "Hey, there's another thing we can exclude." And in the meantime, you're asking everybody to go and go through that pain, when there isn't much to insure there. There isn't -- as I pointed out before, there isn't much damage that you can do with a system under 250 kW.

So that's my main points. I don't know if you may have points.

MR. COOK: Chris Cook with SunEdison once again. I would recommend in the standard increasing the standard to two megawatts, irrespective of whether you change your net metering standard from one to two

megawatts. Two megawatts is clearly the national standard as a breakpoint for an expedited interconnection study. It's contained in FERC Order 2006. And I think just about every state that has promulgated interconnection rules in the last two or three years also uses a two-megawatt breakpoint as their demarcation between an expedited study and a more robust interconnection study.

I would note that for a generator in Florida, as someone mentioned before, if you are interconnecting to transmission, you go under the FERC standard for interconnection. And to the extent that the state standards mirror the FERC standards, you don't have forum shopping from a generator's perspective saying one set of rules is better or more advantageous than the other.

I would recommend in terms of -- I would agree with my colleague in terms of expanding the rules, including more details as to how a utility goes about an expedited study. Certainly the IREC model interconnection rules could be utilized as a guide in that regard.

Another state that I would direct as a good guide would be Colorado, who I believe it was last year or the year before that adopted interconnection rules as

part of a solar program that was launched in the state. And the one advantage of Colorado is that it mirrors the FERC rules almost identically, so they completely eliminated there any forum shopping in the state, identifying that the FERC rules were in fact adequate.

To give you a little background on those, the FERC -- the large proportion of the FERC rules was a consensus filing before the FERC from the Edison Electric Institute, a group of small generators. NARUC representatives were involved in that, NRECA, the National Rural Electric Cooperatives. And all those parties in that proceeding agreed to that filing, and that's really the core of what you find in FERC Order 2006, so I would assume that's not terribly controversial.

A couple of other detailed notes. My colleague to the right from the utilities suggested striking right before the applicable standards the IEEE 1547 and UL 1741 standard. I would propose that that be retained, because an additional standard, IEEE 929, should probably be utilized. 929 was the predecessor to IEEE 1547. It's no longer a standard, but I suspect there's some inverter manufacturers out there who originally had their equipment, which is still available for sale, certified to IEEE 929 and then UL listed to

1741.

This gets a little confusing in following all the standards and the numbers, but IEEE 929 has become subsumed in 1547. But if had you an inverter out there that was IEEE 929 compliant, it could have been listed under UL 1741, because the UL rule for listing this equipment is just simply expanded to cover the difference in the evolution in the IEEE standards.

In order to address the issue that my colleague, Mr. Keyes, raised, IEEE 1547 has a number of subparts that address specific instances. 1547.1 is the testing standard. There's other 1547-point numbers that address other pieces of the interconnection puzzle. And so I think if you listed 1547 et sequence, you would cover all of the applicable parts of 1547.

Thank you.

MS. CLARK: Madam Chairman, if I could just comment --

CHAIRMAN EDGAR: Yes, ma'am.

MS. CLARK: -- on that point. And I neglected to mention that we were concerned about the fact that the rule at some point should include 1547.2. I think the notion of adding 1547 et sequence is not going to adopt the later versions, and you will likely have to come back and update the rule as those become adopted

and available for your incorporation into the rule. But we would agree that those things should be incorporated at the right moment.

CHAIRMAN EDGAR: Thank you.

Okay. Who would like to speak to us next about this portion of the rule?

Yes, sir.

MR. BRYANT: Fred Bryant. If I may, I have just a couple of general comments.

If you look in the title to the connection portion, customer qualification and fees, again, that's my point that under your rate jurisdiction, you can regulate the fees investor-owned utilities charge for the interconnection. I would submit to you that the "and fees" portion doesn't apply to the municipals and the co-ops, because you don't regulate our fees and charges, so that's just a drafting point.

But I also would like to point out that you should consider -- and I'm not sure it is in here -- that there are zoning regulations that might prohibit an interconnection at a customer-owned facility. For example, Commissioner Skop, I know you're very much interested in wind generation. However, there are zoning restrictions by local government that would prohibit perhaps a 40-foot wind generator in a

residential subdivision. So somehow we have to work within these rules with the local government zoning regulations, which, of course, my municipal utilities are also zoning regulators, so we have to pay attention to that.

In addition, unfortunately, some of those neighborhoods will, even if the zoning were appropriate, have restrictive covenants, which has become a national debate, even where the covenants prohibit solar panels on roofs, which I think are, quite frankly, ridiculous. But we do have that problem.

And we certainly do not want the utility on the enforcement stage saying, "Okay. You cannot do this because of restrictive covenants or zoning," because the utility then becomes the policeman, which we're really not. In the municipal systems, our utility director wants to be able to say, "The zoning department won't allow this," if you understand the distinction. It's a little political, if you understand that.

Just a point here on your disconnection. What if a utility customer which has one of these resources for which they're connected up to and receiving these net billings, et cetera, suddenly becomes a delinquent or defaulting utility customer, is not paying their bill, and you actually go out there and you want to

disconnect them for nonpayment of their bill? Can we disconnect them for nonpayment of the bill, but not disconnect their renewable resource? The rule is silent to that. I think that's an oversight.

But again, these things are the practicalities of what we're going to have to live with every day in the field. And I know the staff can't think of everything. I just happened to think of that when I read it, and I said, "Wait a minute. If they're delinquent, we're going to cut them off, but we might not be able to under this proviso here."

CHAIRMAN EDGAR: Commissioner Skop.

COMMISSIONER SKOP: Thank you, Madam Chair. And I apologize for my in and out. Apparently while we were at lunch, apparently a document appeared in front us with no -- of unknown origins. And again, adhering to the highest ethical standards, I cringed a bit. But my understanding of the ex parte communications in the Florida Statutes is that under 120.54, rulemaking proceedings are exempt from ex parte limitations. So again, I --

CHAIRMAN EDGAR: That's correct.

COMMISSIONER SKOP: -- wanted to ask Ms. Helton to speak to that before I spoke or asked a question related to this document that just appeared

before us.

MS. HELTON: That's correct, Commissioner Skop. There are no ex parte prohibitions in rulemaking proceedings.

COMMISSIONER SKOP: Okay. With that in mind, Madam Chair, there's a document that was before us that was entitled -- and I don't know if anyone wants to claim ownership to this, but "Florida Solar Energy Industry Comments to the Florida Public Service Commission's Net Metering Interconnection Standards." Is anyone willing to vouch for this?

CHAIRMAN EDGAR: Commissioner Skop, we have, as you're aware, at the end of the agenda time for public comment, which I've said a number of times. And, yes, these gentlemen did approach and ask if they would be able to speak at that time, and I said they would be recognized. And they asked if they could hand out a document, and I did know that that was going to be done at that time. But I expect that they would like to speak to it, and that is certainly their right, and again, we have the opportunity for public comment.

COMMISSIONER SKOP: I understand, Madam Chair. And like I say, I saw something of interest that I wanted to speak to, but again, I wanted to insulate myself to make sure that I was not in any violation of

ethical standards. So --

CHAIRMAN EDGAR: You are insulated.

COMMISSIONER SKOP: Thank you.

CHAIRMAN EDGAR: Commissioner Argenziano, I'm sorry. Did you have a question?

COMMISSIONER ARGENZIANO: This is an open meeting.

CHAIRMAN EDGAR: Yes, sir. Yes, ma'am. Sorry. Yes to everybody. I'm sorry. Yes, this is an open meeting. We have public comment. We are duly noticed. We are being transcribed. It is a workshop, and we're all here to talk together. Okay.

MR. BRANDT: Madam Chair.

CHAIRMAN EDGAR: Yes, sir. You're recognized.

MR. BRANDT: Thank you. Again, I would like to thank the Public Service Commission for having these hearings, and I think it's a great step in the right direction.

CHAIRMAN EDGAR: And if you would, go ahead and give us your name and your organization.

MR. BRANDT: Yann Brandt with Advanced Green Technologies.

CHAIRMAN EDGAR: And I think I just spoke over you unintentionally, so if you would do that again, and now I will listen. Thank you.

MR. BRANDT: Yann Brandt, Advanced Green Technologies out of Fort Lauderdale, Florida.

I just want to speak to some interconnection. I have a little bit of experience with interconnection. I've been trying to interconnect a system that we have permitted in Fort Lauderdale, and I'm glad to say we've reached a tentative agreement with Florida Power & Light to interconnect the state's largest building-integrated photovoltaic system. And I would like to applaud, you know, Florida Power & Light for working with us to kind of discuss some of these issues we're discussing today, but I think we can learn from that as well as, you know, what the rest of the country and the world has done for interconnection of photovoltaics and other renewables.

I would like to start with a comment made before under Section C, requesting the permission to use secondary protection or additional equipment in order to isolate the photovoltaic system, or anti-islanding it's called, I believe, under the technical term.

The inverters that are out in the market have been out for a long time. There's UL tests, ASTM tests, IEEE tests that mandate that these machines do exactly as they say. To have to mandate or to ask for additional equipment is, one, not needed, as well as there's -- you know, mandating that these systems

require another product that has never been used in photovoltaics or has never been tested under that scenario might actually cause these two brains, basically, that realize that the grid is off to conflict with each other. And in our comments, we'll give you a technical bulletin from an established inverter company that also has some concerns with additional equipment.

As far as voltage spikes that we spoke about before in the insurance discussion -- and this isn't an insurance comment. It's just that voltage spikes -- the inverter, in order to protect itself, is rated, and everything is tested in the PV world to a thousand watts per meter square. That's one full sun. However, there are circumstances where around a cloud, there is additional wattage per square meter, where you may actually get a spike in wattage or voltage coming from the solar. What the inverter actually does to protect itself and the system from being harmed or damaged, it will shave off any excess wattage that comes through the system, protecting not only the PV system itself, but the grid as well. And we'll again give you a technical bulletin for that so you can, you know, contact the inverter company if you have additional questions on that.

The AC disconnect, I understand the utility's

concern, and I don't believe it's a concern that they should have. They see disconnect after the PV side as mandated by the fire department. The fire department has to be able to come shut off the utility's grid and shut off any customer generation as well. You know, it's a life safety issue that's in the code, in the National Electric Code under the photovoltaic section. So I don't see how -- you know, it's just another knowledge of -- we're really not reinventing something that is new. We're just using a technology that has been throughout the country for a while, and throughout the world a little longer than that.

As far as FMEA's concern on permitting and being able to say that, well, this community is now allowed to have solar, the interconnection agreement requires a permit from a building department to be in the hands of the building owner, and I think they will take care of that section of it.

And I would like to finish off by maybe engaging into a little discussion on -- when talk about gross power rating -- and this is where photovoltaics differs from other renewables, is that photovoltaics are sold and installed per watt DC, and that's before -- that's the wattage before it goes to the inverter. Through a series of transmission losses and

efficiencies, we end up with useable AC power in our standard supply to the building. When we talk about gross power rating in the tiers as well as, you know, for all of the discussion, are we going to classify photovoltaics separately as a DC gross power rating, or are we going to figure out a standard way to calculate the AC power output, to figure out the gross power rating so we know which tier to put our customers in to figure out where they want to be in the whole realm? You know, I open that up for discussion in here. I don't know the answer to it, and I look to engaging in conversation.

CHAIRMAN EDGAR: Nor do I.

MR. BRANDT: I think it's necessary to talk about it, because photovoltaics are unique in that way. I appreciate it.

CHAIRMAN EDGAR: Mark, can you share -- shed some light?

MR. FUTRELL: That's a good question. I wish I could. I think we kind of are just going on the assumption that it's converted to AC equivalent, but that's good point. We need to investigate further. I don't have a straight answer for you.

CHAIRMAN EDGAR: That's fine. We appreciate you raising the question, and duly noted, and I know our

staff will look into it.

Yes, sir. Did you have a comment?

MR. REEDY: Yes, please. Bob Reedy with the Florida Solar Energy Center. And just to ride onto that comment, I would say since we're dealing with a utility interface which is AC, I think it's very appropriate that we would decide that that's where we're talking about it, is the AC, the interface gross power rating, which would be a clear definition.

Beyond that, since we talked about jurisdiction, it's not jurisdictional. It's, I guess, a charge or a responsibility that FSEC, our acronym, FSEC, is concerned to try and make it as easy as possible for solar energy to grow in the state. And so I just would -- with respect to Mr. Bryant's remarks about the different rule, I would just hope that the result, whatever the legal requirements are, and I certainly respect that that may be the case, that the effect on the ground, so to speak, for the installers and the industry that are trying to get this done is that at their level, it looks the same wherever you are in the state, with whichever utility and whichever community you're in.

Many of the questions that we receive at the Solar Center, and we get dozens of calls a week about

I'm in this and that utility, or I've got this question. A lot of the confusion has to do with right now the hodgepodge of practices and rules. So let's please work towards a -- after we get through the legal filters, we get to a practical rule that works the same everywhere.

I told Barry Moline I would be kind, but I've got to say that in addition to the voltage surge impossibility from photovoltaics, there's no possibility of an overcurrent scenario either, because photovoltaics are what's known as a current source. In other words, they do not -- they produce a given current output. So on two counts, that doesn't happen. That was kind. That was kind.

However, I do share, obviously, the concerns for rotating machines. They're different animals, and so certainly there has to be consideration of those concerns.

The disconnect is another issue that we see as -- to help promote solar energy, to say that that disconnect -- while needed by a fire department, the fire department uses the house, the meter as a disconnect. Since we also encourage anyone who puts in a solar system to meter the output of their inverter so that we -- for a lot of reasons, REC information as well as just the economic information and the performance, we

encourage a utility grade meter and a utility grade socket.

And we would suggest that that certainly is a fine disconnect, because it's fine enough for everyone and for it to disconnect the whole house, and it should be fine enough to disconnect the PV system. And it can be booted, what's called booted and locked, if need be, and serve that purpose. And it would be a very low cost and dual function. In other words, it's something we would like to see anyway and not add any costs. Certainly in a larger system that wouldn't apply. But I think that, again, as we said, we're talking about a million-dollar system, and we're into a special design scenario anyway.

One other thing. It's not -- it's sort of interconnection, and it has to do with size, but it might get back into net metering, but I didn't quite get a chance to make the comment. And that's just simply to say that when you look at the effect of generation behind the meter and you're looking at the kilowatt-hours, that's all you have, you're not looking at the house, you're looking at the energy bill, I challenge anyone to tell me the difference between a house that has a 2,000 kilowatt-hour a month load with a 1,000 kilowatt-hour a month generation and a house that

just has a 1,000 kilowatt-hour a month load.

And the answer is, of course, there's not any when you're just looking at the energy. And since that's what the billing is on, that is always a problem to me when we start talking about size and subsidies and the impact of how this is going change things, because it really doesn't change things unless you overgenerate. Then you can tell that there's something there. Otherwise, it just looks like a very efficient house, which we promote efficiency tremendously. So, you know, a very big house that's very well built would have a very light load or have, you know, a very low load for the month.

And those are my comments. Thank you.

CHAIRMAN EDGAR: Thank you, Mr. Reedy.

Mr. Krasowski.

MR. KRASOWSKI: Yes, ma'am. Thank you.

I would like to take this opportunity -- Bob Krasowski with the Florida Alliance for a Clean Environment -- this opportunity to float a couple of -- two ideas.

And one is that we've been discussing the financial aspect of implementing a lot of these things. I think we should look at a charge for all power company customers similar to what they do in California, where

they charge everybody a dollar a month. This could be seen and promoted as a transitional fee to help us get from dirty energy to clean energy. And in California, I know they use it to buy inefficient appliances, old, inefficient appliances. And we could do many things, like help finance the initial cost of some of these applications we've been talking about today, with the money.

Not too long ago, the customers of FP&L were identified as being -- there was a need for them to pay like $3.46 a month to pay for a $5.7 billion power plant, and there are other instances around the state. So it wouldn't be something that would be unreasonable to ask the people of Florida to pay for. They can either pay for one type of technology or another, and they can invest in the transitional period into the implementation of these new technologies that are cleaner technologies, and, of course, the utilities can participate. However, you would manage that. Certainly you would manage the fund.

And then the other idea is, Florida is very much a growth, a pays for growth state, at least in some counties. I think this might be done more at the county level than it is at the state level, but it's a very popular concept among Floridians. So I would suggest

that an impact fee, a state impact fee for energy be levied on all newcomers to Florida. I don't want to have to pay for somebody that's moving here, to subsidize their energy needs, especially if their energy needs involve any type of polluting technology, so clean energy is the priority. And we could charge this fee based on the amount of difference between a home built -- how efficient a home is.

An example I've used many times, the Florida Solar Energy Center did a lot of research on a maximum efficiency, zero-energy home, compared it to a control home, and they noticed that there was a 70 percent difference in energy use, and then if they put photovoltaics on it, it was even more. So we could find out those current numbers, and then to the extent that people's homes were less efficient than the 70 percent, or maybe even the 92 percent, that would be -- that would then represent their impact fee, the impact fee that would be assessed on their home. We have to be creative and agress -- assertive, excuse me, not aggressive, assertive in our strategies to transition from dirty energy to clean energy.

Thank you very much for letting me make my comments.

CHAIRMAN EDGAR: Thank you. Other comments?

Yes, sir.

MR. TOTH: Thank you, Madam Chair. I have some questions on the time frames and the order as far as going through the interconnection agreement and them getting back with you, dealing with having to get permits, and what if something changes, what if the utility requires a change. You know, the language in the current rule is not very clear on that. And I've already -- for the sake of brevity, because of the time, I've already provided Mark with some written comments and some suggestions, so I just wanted to bring that up. It's not clear, and it needs to be clarified in the regulation regarding more clearly the steps and the time frame between the steps. Okay?

CHAIRMAN EDGAR: Okay. And before you go on, I'm going to ask, because we are kind of switching gears between pre-lunch and post-lunch, if you would go ahead and for the transcript give us your name too.

MR. TOTH: I'm sorry.

CHAIRMAN EDGAR: That's okay.

MR. TOTH: I'm Bill Toth with All Source Energy from Bonita Springs.

I did have one additional comment, and I'm not sure whether it goes here or not, but it keeps getting brought up about the co-ops and the small public

utilities. Okay?

For five years, I was a private industry representative that sat on the National Environmental Laboratory Accreditation Conference that created the -- for the federal EPA the National Environmental Laboratory Accreditation program. We had -- the reason I bring that up is because we had to wrestle with a lot of these same issues, dealing with everything from a large private entity to a small private entity and a large government entity to a small government entity. In some cases, in the case of a municipal water plant, it was a one-person operation. And I was on that committee for five years, and when I left, they had not finished the regulation or the program. It was finished a year after I left. And in the end, the small public entities were exempted from it simply because the regulatory bodies over them were different, the things like -- I believe it's Fred --

MR. BRYANT: Yes, sir.

MR. TOTH: -- was talking about with different regulatory authorities, and like bond issues and things like that. And I certainly don't believe anyone in here wants to see it take six years for this rule to be passed. And I would like to recommend --

CHAIRMAN EDGAR: Nor do we.

MR. TOTH: I would like to recommend, just because of the difficulties associated with mixing and mingling the different jurisdictional entities, that we remove the small public entities and the co-ops from this rulemaking.

CHAIRMAN EDGAR: Have you been working with Mr. Bryant?

MR. TOTH: I spent five years wrangling with this about ten years ago.

CHAIRMAN EDGAR: No, all good points, and all points, you know, that obviously we've all taken note of, and I know our staff have as well. And the jurisdictional issue, just speaking for myself, is one of those issues that I expect that we will be looking at more closely and continuing to work with all stakeholders. And I don't know, you know, kind of where we'll end up, but what I do know is there will be the opportunity for more discussion, both on the policy and the legal requirements.

MR. TOTH: I just want to see this thing in the near future.

CHAIRMAN EDGAR: Duly noted. Yes, ma'am.

COMMISSIONER ARGENZIANO: I think he has heard a rumor that government moves really slow.

MR. TOTH: I've participated in it.

COMMISSIONER ARGENZIANO: As have I.

CHAIRMAN EDGAR: Thank you, sir. I appreciate your comments.

Any other comments kind of directly on the language that we've been talking about at this point?

Yes, sir.

MR. SHIRLEY: Yes, Madam Chair. I would like to just provide some general comments and sort of put what you've got on the table in the context of what we've seen in some other states. It's really sort of filling in some of the details of the comments we've already heard, and I hope I'm not repetitive.

There are a number of rules that have been adopted in other states. Chris Cook mentioned some of them. In addition, Oregon is currently -- I guess they've just actually begun the formal rulemaking, but they've just finished the stakeholder process to write their proposed rule. All of these other rules share a number of things in common, at least what I would consider the good rules share a number of things in common.

One is the use of some fast-track process for configurations on the system that the engineers are comfortable with as a sort of general rule, the so-called screening process, where if you're no bigger

than 15 percent of the load on that line or your ground fault current is no bigger than some amount, very specific articulated standards which, if you use these, provide a lot of certainty to the marketplace, which is very important to developers and manufacturers so that they know when they come to Florida, if they're in this configuration, you know, they're just going to be interconnected. There won't be a lot of studies or negotiation with the utility. Usually it takes a very small amount of uncertainty or cost for these projects to just be abandoned, because the margins really are not very big. So the more certainty you can provide process wise, I think the better off you are.

And it's really good for the utilities as well, because then they know if you're in the screen, you passed the screen, it's sort of a hassle-free transaction for them, and they can spend their time and focus on the things that are really more likely to be of some concern from the systems operation standpoint.

So I would really encourage you to look at some these other state rules and consider adding this sort of screening process so that you remove the uncertainty from the system.

The other feature I think that you'll see in these other rules is a fairly tight, well-defined time

line for the steps that you go through, all the way from what happens when you file the application, you know, when does the utility have to finish screening process. If you pass the screens, you get interconnected. If you don't pass the screens, then you enter some sort of study phase. And the customer may or may not want to enter that phase, because that's usually when you start spending money from the customer's standpoint. And then you probably also want to define the types of studies that the utility can do and the time lines for those as well so that everybody at the table understands what the whole process looks like going in.

I'm not going to go through all the details of those, because it's fairly lengthy, and some of it is technical, and other is just boring. The point, though, is that it ought -- the more clarity you can offer through those mechanisms the better.

And then finally, most of these also rules also have in them a standardized agreement or series of agreements, depending on -- for different size units, there may be different standard agreements. This also takes a lot of uncertainty out of the process, makes it clear to the customer what the terms of the deal is going to be when you actually sign it if you get through all the interconnection engineering issues.

So rather than leaving that to individual utilities to develop their own standardized agreements, I think it's much better to have a statewide standard, because these developers operate statewide usually. They're not just in one utility's territory, and when they're marketing their product, they want to understand the underlying economic and contractual arrangements that they're going to be facing no matter where they go. So I would encourage you to consider bringing the standard agreements into the rulemaking rather than leaving it aside for the utility to develop on their own for that.

And then just one sort of minor issue on how the units are rated, the power factor sort of question that -- you know, Susan and I are both lawyers, but we're forced to play engineers at work from time to time, so I empathize with her uncertainty about that. But most of the other rules have used a nameplate rating to demark the differences in sizes of units.

I had not heard until today this issue of the solar DC rating perhaps being a higher number than what comes out at the inverter, and that may require some special language. But I really think it's probably better to use the manufacturer's nameplate rating as your criteria, because then it's just -- you can look on

the piece of equipment, and you know what it is, and you don't have to go through some other process to do that.

I have provided to Mark a fairly lengthy survey of rules that I prepared about a year ago. I recently updated to add Oregon and Maryland to that. It's got about 13 different states and a couple of model rules, the IREC rule and the Mid-Atlantic Distributed Resource Initiative Model Rules, sort of a side-by-side comparison of all the features of those different rules, which I'm hoping he'll make available, obviously, to you and to anybody. You know, it's a public record. We haven't published it per se, but it's not copyrighted. You're welcome to use it in any way you want. And it's fairly neutral. It's just describing what's there and not editorializing really on what's good and bad per se, but it might help you in sort of coming to grips with these multiple facets of interconnection.

That's all I have. Thanks.

CHAIRMAN EDGAR: Thank you, Mr. Shirley.

Okay. We're going -- Mr. Keyes, did you have a continuing comment?

MR. KEYES: I just wanted to clarify that DC to AC. And I'm an attorney who occasionally has to play an engineer too, but I have an engineer next to me to cover me if I screw it up.

But inverters are generally in the range of 90 to 95 percent efficient, so your 100-kW solar system is going to -- at 70 degrees, which is the testing temperature usually, you're going to get something like 90 to 95 kW out of that system AC on the inverter, and it makes sense to rate these things on the AC basis, because the AC power is what you're going to be net metering, if that makes sense.

CHAIRMAN EDGAR: And this is why we have engineers on our staff, or one of the many reasons, one of the many reasons. Thank you.

Okay. I would like to kind of move to the last scheduled part of our agenda, which is public comment. And if there are individuals that have not yet had the opportunity to comment that would like to share either specific or general comments related to the subject of the workshop, I would very much like to hear from you, and just make me aware of it. And I know that the gentleman here to the right had let me know that he would like to comment, so if you would, share your name, and thank for joining us.

MR. HANSEN: I'm Gordon -- and you can tell me if you can't hear me. I'm Gordon Hansen, my wife Jeannie over there. And we're from Chuluota, Florida, 20 miles east of Orlando. I'm retired from the Naval

Research Laboratory for 15 years after working there 32 years in underwater acoustics.

My real mission for me is to have a national solar hot water heating program. And that has been proven would save $72 billion and 600 billion pounds of pollution each year just by that one fact. Each homeowner would save one-third of his electric bill with a solar hot water heating system.

I'm also very interested in photovoltaic. Right now we have just received our permit to put in a 4,800-watt voltaic system on our property. We live in the woods, so how is that going to be affected? This is going to be a tower with a solar panel and a hot water panel that follows the sun, and in the middle of that is also going to be a windmill.

So I'm very interested in what our payback will be. According to the present or the old version, I figured it out. It's going to take me about 75 years to have a full payback. This is based on a cost of around $36,000 and our electric bill being around $100, which is not very much. But under the present rules that you are discussing, my payback will be around 30 years, not too bad. That's if I generate enough electricity to exactly offset the amount that I use, because the way I look at this rule is that up to that point, the offset

point, I will get full retail price back from my generating system.

But in order to pay it off early, I need to generate something extra, and right now I'm not clear on what that would be. If it was at retail price, that's great. I could generate extra power and pay it off earlier. What the rule says -- I can't find it -- is that the non-fuel charge plus recovery clauses under an otherwise applicable rate. I don't know what that is. Can anybody explain that to me?

CHAIRMAN EDGAR: Mark?

MR. FUTRELL: That's good timing, because Mr. Moline had the same question that's outstanding. Again, we're talking about page 6 of the draft rule, lines 10 through 14.

And first, he's correct that for power that's offset, that offsets your usage, effectively, you are offsetting the full retail rate. Now, for power that's maybe sold back to the grid, that's accumulated month to month. At the end of 12-month period or at the end of the calendar year, there would be a payment for any unused credit, and that's based upon what's called the non-fuel energy charge plus recovery clauses. Those are terms from the tariff world.

If we think about for a residential customer's

bill, there's basically three big components. There's the customer charge, which takes care of costs associated with metering and billing; there is the non-fuel energy charge to help to recover the fixed costs that the utility has incurred to provide service; and there's the recovery clauses, which include -- the primary parts of that are the fuel charge and purchased power charges.

So the rates you would be compensated at would be the non-fuel energy charge and those recovery clauses totaled together. You would still pay the customer charge, which varies from utility -- it can be 6 to $12, perhaps. It depends. So that would be what you would pay. So, for example, the non-fuel energy charge could be 4 cents, and the recovery clauses, which include fuel, could be 6 cents. You would be compensated at a rate of 10 cents per kilowatt-hour.

MR. HANSEN: Okay. The other comment that I had is, we have at FPL -- we're a customer of FPL, and they have the Sunshine program. And the Sunshine program allows you to join a club for $9.75 a month, and they're going to guarantee that you will be using energy from renewable sources, and one of the sources is a Sarasota plant which puts out 250 kilowatts of solar energy. They have 3,400 members at this point. And if

you figure it out, the solar system they have at Sarasota will cover 60 customers. That leaves 600 more places that they must build in order to cover the amount of members that they've got.

I realize that they're buying power from other towns, other countries, or other states, wherever they can get it. But it doesn't seem like it's possible for them to be selling memberships for something that doesn't appear to be visible. I don't know if there's any comments on that.

The other comment I have is, the difference between DC and AC, actually, AC is measured in RMS voltages, which is the root mean square, and that is equal to the DC value, so there is no difference between DC and AC. And when you convert the DC to AC, if you did it at 100 percent, it would actually equal the DC. Okay? So if your inverter is 95 percent efficient, that's basically what you'll get out, minus some other minor losses.

The other comment that was made that the energy in a one-square-foot area that you would get out would be about a watt. I don't know if that was corrected or not, but respectfully, I believe it's more like 10 watts. The energy that the sun impinges on the earth per square foot has been documented as being

93-point-some watts, and that's in a standard. I use 100. Very easily, if you have a 10 percent efficient system, then you're going to get 10 watts out. I hope that's true, because my 4,800-watt system just went down to 480 watts if it isn't.

Thank you.

CHAIRMAN EDGAR: Thank you. Yes, sir.

MR. STALEY: My name is Tom Staley, and I'm a resident in Micanopy, Florida, and I'm a user of a solar panel system in my house, and I just wanted to give you some -- I got interested in this meeting because I had some problems with it, and I wanted to just tell you what they were.

I have a small, 1,000-watt system, basically a thousand watts, so that's one kilowatt. I spend $60 a year on $200,000 worth of insurance, and I had to hunt for a company to do it. I didn't bother going through my homeowners. At the time, I didn't even think about it. But I spend $60 on $200,000, which is required by Progress Energy.

I have no problem with the power that we produce that we use, because every bit of that is our power. I get maximum benefit out of that. But the power that we produce that we don't use which goes back into the grid, I get reimbursed somewhere between 4 and

5 five cents a kilowatt-hour. And what happens -- we've been talking about how to generate a rate, a payback rate. My feeling is, if a utility company is charging you 10 cents for that month, you should be reimbursed for 10 cents, and here's the reason why. If they take -- that power that I produce that I don't use goes back into that grid, they're taking that power and selling it to one of my neighbors, and they're getting full benefit from that, and then they're reimbursing me half of what they're getting. So don't tell me that there's no payback there. They're getting big paybacks here, and they want to keep it that way. And my feeling is they should be paying us back the exact 10 cents that they charge us for a kilowatt-hour.

And the reason we put the system up -- we never asked for a subsidy or a rebate of any kind. We didn't ask for it, and we didn't get it. We just paid for the system. This was before Florida had a rebate system. But the reason we did it was because the alternative to doing what we do is using more coal. And if you use more coal -- I don't know if you all fish in the State of Florida, but fishing has gone down the tubes in the State of Florida. We have acid rain problems, and we have mercury in the water. They're all caused by coal. That's the biggest source of all that

mercury and that acid rain that's coming out. So the only thing that I could do about it was to do something on my own, which we did.

I don't believe that there should be any size limit on PV systems. I think you should consider -- I think you should consider any size PV system, because in my book, PV and wind generation are the only two viable, really viable nonpolluting ways to get energy. And in Florida, contrary to what somebody said, I really don't think wind is going to be very big. And I think Florid Power & Light, who's building all the wind generators out in California and Texas, is a good example of that. They're not doing it here. They're doing it there, and they're doing it for a reason, because it's much better out there than it is here. But I think wind is a great source, and I think PV is a great source, and I don't think you should have any limit to it.

And I wanted to say also that I think the impediments to net metering right now are much greater than the subsidies that the State is offering. And if I had known that I was going to be paid back half of what my kilowatt-hours are worth for the past four years, even after asking my power company to come back in and put my meter back on the wall -- the original meter I had was one of those mechanical meters, and it actually

turned backwards. When I produced power, it turned backwards. When I used power, it turned this way. So there was no problem with calculating what I needed to get reimbursed. There was no reimbursement. They just took a kilowatt-hour off for every kilowatt that we produced. And that to me is a fair system. But the way we've got it right now, Progress Energy is stealing from me. That's the way I feel about it, and stealing from everybody.

And I think the reason -- I did an Internet search recently on the State of Florida rebate program. Only -- at that time, which was last week or the week before, there only 76 rebates that had been issued for PV systems in the State of Florida. And I think the reason only 76 are offered in the State of Florida with all the sunshine that we have is because people have realized it's not a viable system without net metering. You need to have net metering. If you don't have net metering, it won't work.

Thank you.

CHAIRMAN EDGAR: Thank you, Mr. Staley. And our staff has distributed a copy of the information that you provided, so thank you for bringing this as well.

And I know that the gentlemen in the back would like to speak, and so if you would come forward.

Yes. I think if you'll use those two chairs over there by the court reporter, that should work. And if you would, tell us your names.

MR. MAINGOT: I'M Chris Maingot with Superior Solar Systems.

CHAIRMAN EDGAR: And let me make sure that your mike is on. Can you check the button there?

MR. MAINGOT: Okay. I'm Chris --

CHAIRMAN EDGAR: Thank you.

MR. MAINGOT: -- Maingot with Superior Solar Systems. We're a contractor in the Central Florida area. And myself and Bill Gallagher -- his company is Solar-Fit. He's also a contactor on the East Coast. And we represent the Florida Solar Energy Industries Association, FlaSEIA for short. And we apologize for any controversy we caused in handing those fliers out at lunchtime.

CHAIRMAN EDGAR: No controversy. Sometimes there's confusion with the paperwork, but it's all fine.

MR. MAINGOT: Okay. I would just like to read a little bit off of our handout. The goal of the Florida Solar Energy Industry is to expand the use of solar energy throughout the state, to eliminate regulatory barriers, and contribute to Florida's energy mix at an appreciable rather than symbolic level. By

doing so, the state will benefit through more diversified power generation, increased grid reliability, reduced dependence on foreign energy sources, energy price stabilization, economic development, and reduced greenhouse gas emissions.

These goals can be reached through the following recommended policy changes. These recommended standards are consistent with current best practices in other states, as well as with the model rules for interconnection and net metering by the Interstate Renewable Energy Council, who is represented here today.

And I'm not going to go through all of this stuff. Most of these points have been covered. We agree with IREC that we need to get the cap at two megawatts instead of one megawatt. That seems to be more of a national standard.

We believe that the maximum AC nameplate capacity shall not exceed 90 percent of the customer's utility feed rating. I know that Mr. Moline had said 75 percent was something that they were using right now, but we believe that 90 percent still has safety built into it.

There were a couple other points here. I know Bill has one issue in the rule that he would like to talk about as well too.

MR. GALLAGHER: Yes. I'm Bill Gallagher. I also would like to apologize for the improper protocol.

CHAIRMAN EDGAR: That's okay. I do need you to speak up or make sure the mike --

MR. GALLAGHER: Can you hear me now?

CHAIRMAN EDGAR: That's better. Thank you.

MR. GALLAGHER: Okay. I apologize for the improper protocol.

Something that was brought up here that I think is extremely important that we may have overlooked is the use of a public service message. There was no -- something was said to the effect that, well, people will just catch on. And I've been in the solar industry business for about 32 years, and they really -- they only catch on through direct advertising by small contractors such as us.

So we really need the help of the State of Florida, maybe through public service messages just saying that, hey, the sun is here, it's available, you know, don't miss out on your state and federal credits, call your whatever today. It's as simple as that. It would probably be something that the local papers and the radios would be proud to do if it was approached right. We really need the help doing that. Excuse me.

The other thing that I'm looking at here that

I have a question on -- and maybe I'm just reading it wrong. On page 3, line 22, it says the electric utility shall have the right to have personnel present at the initial testing of equipment, customer equipment and protective apparatus. I'm not sure if I'm reading that right, but that's very, very impractical, and probably impossible if we're talking about coordinating a meeting with a utility representative at the homeowner's house when we activate the system. You know, we may see anywhere from 10 to 70 systems a day installed ultimately in the State of Florida.

Please correct me if I'm wrong. Is that what that relates to?

MR. FUTRELL: It gives them opportunity to be there. It doesn't require them to be there, but it gives the opportunity. They have the right to be there. And it's in our current solar PV rule.

MR. GALLAGHER: I suggest that, you know, you review that. If for some reason the utility took the liberty of saying, yes, we have to be on every one, it would cripple the industry. And at this point, it really is unnecessary. We go through a strict certification process through building departments. It has to be inspected. To have a utility company representative present, it would be hard to do.

CHAIRMAN EDGAR: Yes, sir. Commissioner Argenziano.

COMMISSIONER ARGENZIANO: And, Staff, I may need some help here, but the way I'm reading that is that if the company -- the company has the right to go there. If the consumer or the company, your company calls them and they can't get somebody out, well, then it's their tough luck. Wouldn't that be it?

MR. FUTRELL: That's the way I understand it.

COMMISSIONER ARGENZIANO: In other words, if the electric company could not -- I mean, if you notified them and did due diligence, we're going to test this today, and the company -- of course, you've got to give them some time, I would imagine. But if they can't get somebody out there, then I wouldn't want to see them hampered by that either. But I don't think it says -- I guess it could be construed many different ways, but I would think there would be a good attempt to try to get the electric utility to be out there, and if they can't, I don't think it would stop your operation. And I would want to make sure of that, of course, and see what the electrics have to say also, Chairman.

MR. COOK: Madam Chairman, Chris Cook. If I could weigh in on that, I think you'll find if you look at a lot of other states' rules, interconnection rules

in this regard, it's the customer's obligation to notify the utility when they intend to connect the system and give them typically 10 or 15 business days advance notice, and then the utility exercises their right as to whether they want to be there or not. But it doesn't hold up the project. You go forward whether they're there or not.

MR. GALLAGHER: Well, thank you, Chris, for clarifying that, because that really is -- you know, really crucial to the construction business.

But overall, I had a whole list of questions, and every one of them was addressed, and we thank you very much from allowing us to speak and addressing this.

CHAIRMAN EDGAR: Absolutely. Thank you for your participation. But stay with us for a few moments, if you would.

Commissioner Carter.

COMMISSIONER CARTER: Thank you for coming. I understand -- thank you, Madam Chairman.

I understand that you've been in the solar business for about 30 years.

MR. GALLAGHER: That's correct, sir.

COMMISSIONER CARTER: Have you noticed a dramatic increase or any kind of increase, or has there been an increase in more and more homeowners going with

solar for their hot water heaters or the use of solar in their homes?

MR. GALLAGHER: Well, if I can take you back a little bit in time -- and it's hard to believe I've been in business in 30 years, because I'm only 18 years old. No, seriously, you know, way back in -- and, of course, a lot of the fellows have been here a long time too. But initially when the tax credit was instituted back in the late '70s, early '80s, the process was that the tax credit would be phased out over about a four-year period. It would go from 40 percent to 30 percent to 20 percent to 10 percent and finally phased out, because the tax credit isn't the end-all. It's to get people motivated to go ahead with it.

Well, in 1985 around Christmas time, there was, of course, an administration change, and the tax credit, instead of being reduced at that rate, was basically stopped. And at that time, it basically cut the legs off the solar industry. Many, many people went out of business. It just tells you how crucial it was. The public was so gung-ho about doing solar, and it was just a very, very vibrant economy. Well, when that happened, it just -- it reduced it to ashes. And it has taken about 20 years to rebuild it to the point now where we have the momentum again, and a lot of it is

instituted by, you know, the federal.

Okay. Then when the state got involved, and now with Governor Crist, these are all such positive things, because -- and somebody brought it up earlier. If you just, you know, take a trip over to Germany, take a trip to Japan, go to Israel -- in Israel it's mandated that every permit pulled, every home has to have solar. I was fortunate enough to visit the country about a month and a half ago. Every house, every building has solar water heating on it.

And I don't want to belabor this, but if I can take a couple more minutes, there was conversation some time ago about how expensive solar is. Well, solar thermal is 3 to $4,000 per household, and once you get your credits, it's like $2,000. And these systems can be financed for about what your savings are, so it really doesn't cost anything to do this technology. There's a misconception out there that it's expensive, and it really is not. And I think if we inform the public, maybe through public service messages, you will see the industry take off and go where it needs to be, because we're light years behind other countries.

CHAIRMAN EDGAR: Thank you. Commissioner Skop, I know you had some questions.

COMMISSIONER SKOP: Thank you, Madam Chair.

Again, I wanted to also thank Mr. Maingot and Mr. Gallagher for coming. Again, we appreciate your input. And again, I apologize. There was no controversy associated with the document. I was just merely trying to ascertain the origin of the document that I wished to speak to. And given the ethical obligations that I have not only as a Commissioner, but as an attorney and member of the Florida Bar, there's certainly no harm in proceeding cautiously. So, again, I wanted to just make it known that there was no controversy, I just wanted to make sure that I was able to speak to a document that I found interesting.

So in that regard -- and I don't know if others in the audience have the document, but item 2 in the simplified interconnection standards that the Florida Solar Industry comments are advocating speaks to the maximum AC nameplate capacity shall not exceed 90 percent of the customer's utility feed rating.

And simply the question I had, and I would like to direct it to the members of the represented utilities, would the limiting requirement shown in item 2 of the simplified interconnection standards mitigate any of the cross-subsidization concerns of the respective utilities with respect to, if it were simply limited to what they could draw or the feed, that would

also limit what they could potentially -- their output. I just wanted to get some perspective on that, if you will.

MS. CLARK: I don't have a copy of that, but I think -- but as I understood that limiting factor, it had to do with how much energy can be put back for the safety of the installation. Are you suggesting that there might be some limitation on how much excess energy would have to be bought back?

COMMISSIONER SKOP: Well, what I have is -- actually the document I have is truncated, which is part of the reason I'm having trouble understanding it. But nevertheless, I was just trying to state that it advocates a maximum AC nameplate rating of two megawatts, which is consistent with some of the other testimony that we've had, but is different than what staff is proposing in the proposed rule.

But it also has another requirement that the maximum AC nameplate capacity shall not exceed 90 percent of the customer's utility feed rating. So I'm wondering whether that in itself is an additional limitation upon the capacity nameplate rating of the two megawatts and how the utilities might feel about that.

MS. CLARK: We can respond to that, but as I heard what Mr. Moline was saying on that issue, that is

to protect what you might feed back into the system so that it doesn't have the possibility of exceeding what the system can take.

COMMISSIONER SKOP: Right. Well, I was --

MS. CLARK: I must be -- I'm not communicating with you at all.

COMMISSIONER SKOP: Well, I guess that goes into the sizing criteria, where they said that it was sized for the particular application, so I was just -- never mind. I think --

MS. CLARK: Do you want me to see if I can get you some help?

COMMISSIONER SKOP: No, that's fine.

MR. KEYES: Just to give a simple example of my home, and I'm going to use really round numbers, but the maximum amount of power that can come into my home is somewhere around 10 kW, so 90 percent of that would be nine-kW system I could put on my roof. And over the course of the year, sometimes when everything is on, I'm using six kW. In the middle of the night, I'm using anything. Average, over the year, I'm using somewhere around one kW.

So my nine-kW system, the sun is only shining roughly about a quarter of time, and sometimes it's, you know, dawn or dusk, and it's partial. But over the

course of the year, the average output of my nine-kW system would be then somewhere two and a quarter kW, which is a lot more than my consumption. So, yes, with that 90 percent standard, you could exceed your -- if I understand the issue correctly, you could exceed your load by quite a bit. Your generation could exceed your load.

COMMISSIONER SKOP: Thank you.

MR. KEYES: And maybe you shouldn't put too much faith in me, because the gentleman was absolutely right that you get 10 watts per square foot, and I was completely wrong, not one watt.

COMMISSIONER SKOP: Thank you.

CHAIRMAN EDGAR: Commissioner Argenziano.

COMMISSIONER ARGENZIANO: I don't have a question for this gentleman, but I would like to ask Mr. Tom Staley, who was up before, because I think he said something, and I just want to make sure.

CHAIRMAN EDGAR: Okay.

COMMISSIONER ARGENZIANO: One more.

CHAIRMAN EDGAR: Sure. Sir, could you come -- I'm sorry. Could you come forward again and let us ask a clarifying question. And we will need you to come to the microphone so that we can get it on the transcript. Thank you.

COMMISSIONER ARGENZIANO: Thank you. Mr. Staley, did you say before that Progress Energy required $200,000 of insurance?

MR. STALEY: That's correct.

COMMISSIONER ARGENZIANO: And could I ask staff, the current rule says 100,000, and who is the one who implements that upon the consumer? I mean, if the rule is 100,000, where does Progress Energy have the right to require 200,000?

MR. HINTON: According to the rules, if it's a 10-kW or smaller PV system, then I don't think they do have the right, unless somebody has some more information they would like to share.

COMMISSIONER ARGENZIANO: Thank you. Mr. Staley, that was required of you when you put your system in by Progress Energy?

MR. STALEY: Before I could turn it on.

COMMISSIONER ARGENZIANO: I would like to check into that.

MR. HINTON: What was the date?

MR. STALEY: Pardon me?

MR. HINTON: How long ago was that?

MR. STALEY: It was August of 2003.

COMMISSIONER ARGENZIANO: And, Madam Chair, I would be concerned in the future. You know, who checks

on that requirement? Thank you.

CHAIRMAN EDGAR: Commissioner, thank you for your question, and thank for sharing that additional information. And I know our staff is going to look into it, and get back with us, of course.

All right. Is there anybody else who has not had the opportunity to share comments with us that would like to?

Commissioners, any other direction for our staff or closing comments? Commissioner Carter.

COMMISSIONER CARTER: Thank you, Madam Chair. Today I was sitting in a listening mode, to listen, to hear the disparate opinions and recommendations as well as listen to some of the exciting things that are happening.

I think that we've already made it clear to all of the people that are participating that we would encourage them to submit written information that will help us come to a way to clarify some of the points. I look forward to reviewing the documentation and getting it back. I think this is a great beginning, and a lot of people from different areas, different ideas, and all like that, and I think that's the best way to do it. When everybody has some input, then we can come up with the best possible solution. So I just want to say thank

you.

CHAIRMAN EDGAR: Thank you. Commissioner McMurrian.

COMMISSIONER McMURRIAN: I had a question. I'm not even going to try to be as eloquent as Commissioner Carter was and thank everybody for their comments today.

But earlier, at the very beginning when Ms. Gervasi was reading the notice, there was -- and I should have asked this then probably. But there was a discussion about Rule 25-6.065 is what we have before as amended, but there was also mention of a .066 and a .067. And I know Mr. Shirley talked about separating the rules into two different parts. So I guess what I'm trying to understand is what's going to be in .065 and .066 and .067, not exactly, of course, what's in those rules, but --

MS. GERVASI: I don't think we know that just yet, but that's something we will certainly be looking at.

COMMISSIONER McMURRIAN: Is that what it's for?

MS. GERVASI: And we may not end up using all of them.

COMMISSIONER McMURRIAN: Okay. So it's just

sort of a placeholder so that if we do decide to parse things out.

MR. FUTRELL: Right. It gives us flexibility that if we want to separate the rules into interconnection and net metering, we have the option to do that.

COMMISSIONER McMURRIAN: Okay. And I did have one other question, Chair.

With regard to the comments that were brought up about dispute resolution, I was wondering if staff had already considered an initial step. I don't mean to put you on the spot either, but I also wondering if there were other -- if maybe you were going to look at that, if there might be other models where there might be some initial step before it comes to the Commission.

MR. FUTRELL: Well, certainly we would like to try to, you know, just over the phone or meeting with the customer face to face and interacting with the utility try to get as much as we could straightened out before it got to a more formalized process. That would certainly be our desire, is to try to handle things informally to the extent we can, being mindful of trying to get resolution as quickly as possible.

MR. TRAPP: I would like to just add that I think staff's intent was to basically use the complaint

process that the commission currently uses, including the use of, you know, our Consumer Affairs Department as a collection point for complaints, try to handle them to the extent that we can at an informal staff level by, you know, communicating between the customer and the utility, and then to the extent that it needs to escalate to a more formal type of full Commission ruling, it would ultimately get there.

I think there is some other language and some other rules that may be more explicit with respect to the Commission's overall complaint handling process. I know that we -- I think this was a matter that we talked about in the hardening rules too, and I would like to have staff have an opportunity to go back and look at that language and maybe spell that out a little bit better.

COMMISSIONER McMURRIAN: That sounds good. That was all, Chairman. Thank you both.

CHAIRMAN EDGAR: All right. Thank you. And as we've discussed a little bit, I think, today, we've requested and we are requesting written comments by September 18th. The transcript is expected to be available by September 10th. I want to on behalf of all of us thank everybody for their participation.

Commissioners, it's been another long day and

another good day. I think we've had a lot of really good information. And thank you to our staff, and we are adjourned.

(Proceedings concluded at 4:36 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA:

COUNTY OF LEON:

I, MARY ALLEN NEEL, Registered Professional Reporter, do hereby certify that the foregoing proceedings were taken before me at the time and place therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages numbered 101 through 202 are a true and correct record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor relative or employee of such attorney or counsel, or financially interested in the foregoing action.

DATED THIS 9th day of September, 2007.

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