BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. UNDOCKETED

In the Matter of

INTERCONNECTION OF RENEWABLE GENERATORS.
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PROCEEDINGS: STAFF WORKSHOP

DATE: Thursday, April 19, 2007

TIME: Commenced at 9:30 a.m.

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

TRANSCRIBED FROM
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P R O C E E D I N G S

MR. GRANIERE: Hello. Anybody who wants to come up and talk is free to do so. Anyone who doesn't want to talk is free to sit back there.

MR. HARRIS: Well, you can sit back there and then you could talk later.

MR. GRANIERE: Or you could talk later. You can talk now. You can talk later. Okay.

MR. HARRIS: Again, a couple of interesting -- preliminary matters. First, we do have a notice that was issued by the Commission on March 22nd. This is a staff informational workshop on interconnection of renewable generation, renewable generators. Again, we're putting together a sign-in sheet, and we'll pass it around, and it will be back on that back table again. So I would encourage everyone to sign in.

It's being recorded. We have a recorder going. It's going to be transcribed. There will be a written transcript within the next couple of weeks. You can call me if you need a copy of it before this matter gets docketed. Once we actually get a docket open on these issues, the transcript and any comments or things that are received will go into that file, and there will be a way you all can receive it. In the meantime, you can call either one of the staff, Judy Harlow, Cayce Hinton, Bob Graniere or myself, Larry Harris, and we will

get you what we have.

Since it's being recorded, whenever you want to speak, I'd ask that you introduce yourselves. It makes it a lot easier for the court reporters to be able to have a name to type as opposed to trying to figure out whose voice it is. I'm not the best at that, but I try to remember.

With that, I'll go ahead and give it to Bob, and we'll get started. Thank you.

MR. GRANIERE: All right. This one, I think, it being more technical in nature, I think it probably would be useful to follow this agenda more closely than we did yesterday, mainly because these issues, hopefully, are set up in an order that makes them easier to handle. But if this particular setup is wrong in any way or you feel -- or anyone at the table feels that another issue should be taken up first, let me know, and we'll just change the order of the questions around. Otherwise, I'm going to try to just go down through the questions and get the answers -- or at least the positions and a little bit of discussion on what's going on here.

I think probably from the lessons that I learned from yesterday's workshop here is that it would probably be useful if a very short statement of the purpose is made so that everyone understands exactly what I think we're trying to do here. What we're looking at is interconnection of PVs in particular, but renewables in general. That's number one.

Number two, we're looking at the fact that right now the streamlined and expedited interconnection goes up to 10 kW, and we're asking the question is there a bigger number than 10 kW where we could have streamlined and expedited interconnection. How big is that bigger number, and should it be the same for all levels between and 10 and some larger number, or should there be different criteria for different tiers.

For example, let's just say for the sake of argument that the bigger number is 50. So we have a set of procedures up to 10, perhaps. And another set of procedures up to 25 -- between 11 and 25. And then perhaps another set of procedures between 26 and 50. But in all instances, the purpose is to streamline and expedite the interconnection. So that's what we're looking for. And we're looking to see if this is possible, and if it's possible, how quickly it can be done. And should there be different rules and procedures for different levels. Is that understood?

Okay. So starting that way, the first question here is what is the Florida Public Service Commission's jurisdiction with respect to interconnection to the host utility? So, obviously, we think we have jurisdiction. Does anybody out there think we don't?

MS. CLARK: Bob, it's Susan. I think it's important to keep in mind sort of the distinctions between the Commission

and FERC. Obviously, the Commission has jurisdiction over retail service and FERC has jurisdiction over wholesale, but the PSC does exercise jurisdiction over the interconnection of QFs because of the delegation from FERC. And pursuant to its retail jurisdiction, we believe that they would have jurisdiction over the interconnection made at the utility's distribution level voltage.

MR. GRANIERE: Okay. All right. So, basically, the first question is, yes, we do have jurisdiction, you know, subject to those statements.

MS. CLARK: If you're talking about those types of interconnections.

MR. GRANIERE: Right. So we don't necessarily have jurisdiction if this renewable fails or passes the IPP test, essentially.

MS. CLARK: Well, I would give you this example. As I understand it, you would not have jurisdiction if the interconnection isn't with a host utility, if it was where they would be wheeling the power to a different utility.

MR. GRANIERE: Okay. Any opposing positions? All right. Okay. That was an easy one.

The second question is exactly how are these interconnections for renewable energy providers accomplished here in Florida?

I know each utility may have a slightly different

approach once we get past 10 kW. So I don't know how we'll be able to get information on this, unless Tom or Susan knows all of the differences between the other utilities. But just let us know what you can tell us. And then if we need more work from each utility, we'll just send out a request.

MS. CLARK: Bob, you're right. There are differences, but I think it can be -- basically, it has to be pursuant to the interconnection rule, existing interconnection rule for the QFs. And it involves a customer application and then a customer-funded interconnection study, and then the negotiation and execution of the interconnection agreement. And then the customer-funded interconnection facility to accomplish connecting it to the grid.

MR. GRANIERE: Ooh, that's a lot of stuff. Can we start that a little bit closer now? I have to write this down. there's a lot of stuff there.

Okay. So the first one is there's an application, and that's the -- and the customer puts that together.

MS. CLARK: Right. This is under your --

MR. GRANIERE: Right. And then, second, there's a study, and the customer pays for it. And then -- and that study is for what?

MS. CLARK: How to accomplish the interconnection of that particular facility. And I'm speaking of under the --

MR. HARRIS: QF.

MS. CLARK: -- QF rule, yes.

SPEAKER: QF.

MS. CLARK: This is under Rule 25-17.087.

MR. GRANIERE: Okay. QF rule.

MR. HARRIS: And a different process, as you say, applies to the 10 kW and smaller.

MR. GRANIERE: Right. And then after the study, then the next thing that happens?

MS. CLARK: Then there is the negotiation and execution of the interconnection agreement, which is part of the tariffs that are filed.

MR. GRANIERE: So the execution/negotiation means what?

MS. CLARK: The terms of the interconnection agreement.

MR. GRANIERE: Okay. So -- okay. So, so far we have an application, we had a study, now we've negotiated an agreement. Then what happens?

MS. CLARK: And then the customer would do the -- a funded interconnection facility would be constructed.

MR. GRANIERE: Okay. So then there's the interconnection facility, and the customer pays for it. Okay. And that's under the QF. And I guess this is a general approach that applies to all of the utilities?

MS. CLARK: Yes. It's pursuant to your rules.

MR. GRANIERE: Yeah. Okay. Sometimes I don't read these things. You know, it's easier just to ask questions.

MS. HARLOW: Susan, could I ask a quick clarifying question? Is that how all facilities are handled, renewable facilities that are over 10 kW by all the utilities at this time?

MS. CLARK: Yes. That is my understanding.

MS. HARLOW: Thank you.

MR. GRANIERE: Okay. About how long does this take?

MS. CLARK: I don't have the answer to that question. I would venture that it depends on the size of the facility to be connected and the details of that interconnection.

MR. GRANIERE: And I'm just going to ask for a guess if anybody can help. More than six months?

MR. SANDERS: It could be more than six months. This is Tom Sanders from FPL. It could be more than six months, Bob.

MR. GRANIERE: Okay.

MR. WALLACE: This is Wayne Wallace.

Yeah, I could certainly agree with that. Just reading the documents and understanding all of that can take quite a very long time. Easily in excess of six months.

MR. GRANIERE: Okay. Now, with a 10 kW or less, how long does it usually take?

MR. WALLACE: This is Wayne Wallace again. I can

answer that. That's as quickly as less than an hour to fill out the paperwork. I mean, you have to have the electrical contractor sign it -- excuse me, the electrical inspector sign it, the solar or electrical contractor doing the work sign it, and then it's forwarded to the utility.

MR. GRANIERE: Okay.

MR. BROWN: Bob, this is Mike Brown. In addition to what Wayne was saying, the actual filling out of the application doesn't take much time, and it varies utility to utility and also case by case as to how long it usually takes. And the job -- depending on whether or not they need the utility to come in and replace the meter or qualify the system for another meter, dual meter. It depends on how they're going to meter it and what their expectations are. But I've seen the actual switching of the meter take as long as three months. So, I mean, from application to the customer actually -- although his system is still interconnected, he's not registering any energy because the meter has not been changed.

MR. GRANIERE: Okay. When you're interconnecting the system, how long does that take?

MR. BROWN: The physical work?

MR. GRANIERE: Yeah.

MR. BROWN: That's like the last stage of the installation, and that phase of it is the final wiring, and we're talking probably a few hours of a day's work.

MR. GRANIERE: Half a day?

MR. BROWN: Possibly.

MR. GRANIERE: And then how many days leading up to that day?

MR. BROWN: It depends on the size of the system. Under 10 kilowatts, if it's straight grid tie, single inverter, no batteries, the whole job shouldn't take more than a couple of days, two or three days.

MR. GRANIERE: Two or three days. Okay.

MR. BROWN: On a regular standard installation. There are other factors, physical limitations and things that could extend the installation time.

MR. GRANIERE: Okay. So what you're -- so, I guess, if I were to cheat a little bit here and say that everything went quickly, application, installation, interconnection all happened right away, someone could wait, in theory, up to two and a half months to get the meter?

MR. BROWN: Yes. It has happened.

MR. GRANIERE: Okay.

MR. JONES: This is Jeremy Jones. To further differentiate between the under 10 kW and over 10 kW, in my experience, when you go over 10 kW, although the paperwork and application form between the various utilities might be very similar, the resulting rate structures and fees would not necessarily be similar. So as of right now, there's a lot of

unknowns when you install over 10 kW in terms of how that's going to affect your customer's bill, what the resulting rates will be and fees and so forth. Whereas, under 10 kW there really isn't an effect there, so it's a strong benefit.

MS. HARLOW: This is Judy. Have you seen an improvement in that for under 10 kW since the Commission's rule was put in on small PVs? That was probably about early 2003.

MR. JONES: Yeah, absolutely, because that customer knows that once they install that 10 kW or less system, their rates will remain unchanged. It's not net metered, but they're still -- they're not going to have additional fees and charges resulting from the installation of that system. Whereas, there could be ongoing monthly charges from the utility for a larger system, as much -- you know, I think that some of them might be 60 or $70 a month, and then a fee per kilowatt of capacity of the installation as well. So when you go with a larger system currently it can greatly affect the customer's bill in a negative way.

MR. GRANIERE: Now, I think I understand you saying that any charge can affect someone's bill negatively. That's sort of like the way it is. I think the question is, is the charge needed or is it too high, not the mere fact that it's a charge. I mean, if the charge is needed, and it's set at the right level or reasonable level, then it's there. But simply saying that there's a charge, you know, yeah, you've got to pay

for stuff. And so we need to work that out. And I think that's in Section F there of this, financial and things like that. So, yes. You know, I understand that, but, you know, we just need to recognize that some charges are needed, and the idea is not to have unnecessary charges, and the charges that are necessary not to have them be excessive. And so that's what I think we're trying to understand here.

MR. WALLACE: Bob, if I may. This is Wayne Wallace. I have a comment.

Presently some utilities in Florida here for systems under 10 kW have a fee imposed to process the utility interconnection agreement. Is that in the PSC rules, if you will?

MR. GRANIERE: Don't know. I don't know.

MS. CLARK: Let me just -- let me look, and I think it is in the rule.

MR. GRANIERE: Okay. Okay. We're -- well, no, Susan is looking it up, too, so --

MS. CLARK: It may not be in the rule. It may be in a tariff that is filed indicating that there is a charge.

MR. GRANIERE: Okay. So it's possible that the fee is in the tariff. Okay.

MS. CLARK: And those tariffs would be approved by the Commission.

MR. GRANIERE: Sure.

MS. CLARK: Bob, it's just been pointed out to me that it is in 25-6.065(2)(d), and it says, "The identification of a reasonable charge for processing the application for interconnection."

MR. GRANIERE: Okay.

MS. CLARK: I believe that's also consistent with what FERC provides for is a fee for processing the application.

MR. GRANIERE: Okay. Let's move on, I guess, to the next part. Now that we have an outline of what occurs in general over 10 kW, what do we essentially achieve by streamlining this interconnection process?

MR. WALLACE: Hey, Bob. This is Wayne Wallace. I can help try to answer that.

What can be achieved by streamlining this is making a better footprint for Floridians, helping Floridians lower their utility bills, helping Floridians take advantage of the solar rebate program that is presently in place. Consumers, businesses. You know, presently the rebate program by the DEP, if a corporation wants to go green and leave an environmental footprint, they can do a PV system up to 25 kW. Presently, the simple utility interconnection agreement is up to 10 kW, with all of the fees and obstacles and mountains of paperwork and up to six months, in excess of six months of trying to get an interconnection agreement, a customer cools down very quickly, and they simply may not want to do a PV system. So

streamlining it, making it simple, easier for the public, that would be a good service.

MS. HARLOW: Wayne, could you tell me how successful you feel the interconnection process is today for under 10 kW systems?

MR. WALLACE: Yes. Thank you. Wayne Wallace. I do believe that that recent under 10 kW interconnection agreement is very good, other than the fee that's imposed. That does detract a bit from it. But it is, for all general purposes, pretty good and very quick.

MS. HARLOW: And how much is that fee, please?

MR. WALLACE: I understand it's $95 through, I think, one of the utilities.

MR. REEDY: Bob Reedy with an additional comment there, though. And that is that we at the Solar Energy Center had a lot a questions from homeowners outside of the service territories of the investor-owned utilities. And that again speaks to the fragment nature of the regulation is -- only applies to -- I don't know, maybe it's half the customers in Florida. I'm sure staff knows the breakout, but -- so that is one of the -- it's very smooth, as Wayne said, in those areas, and then it's pretty spotty everywhere else. And, of course, there are areas of Florida that are, particularly in the cooperatives and kind of the rural areas are really growing rapidly. So that's something that could be addressed,

hopefully, this time around.

MR. GRANIERE: Okay. I have a question for Mr. Wallace. Several times you've sort of thrown out the number 25 kW, and I don't think that applies to residential. Am I right there?

MR. WALLACE: Yeah, Bob. Wayne Wallace.

I throw out that 25 kW number because it's a number kind of set by their solar rebate program to maximize economies and investment, and the numbers work the best with a 25 kW system.

If a business, corporation wants to, again, maximize their environmental footprint, the $4 watt rebate is maximized from the DEP at $100,000. That equates to a 25 kW system. So when a business or corporation approaches the solar industry, they say we'd like to maximize this. We want to do the right thing. We want to invest in a solar PV system. We have done a little research. We see 25 kW is the size system that will, you know, probably be good for us. Oftentimes they want to do a larger system. So that's where that number comes from.

MR. GRANIERE: Okay. So then I would presume if the rebate were to -- were to go up, then that number would go up?

MR. WALLACE: Correct.

MR. GRANIERE: And if the rebate were to go down, that number would go down?

MR. WALLACE: Typically, yes. Although what we're

finding, again, is most companies like to do even larger systems.

MR. GRANIERE: Okay. On that issue, how much -- when you say most companies would like to do larger systems, let's break it down a little bit. When you say most companies, how many are we talking about?

MR. WALLACE: That I'm aware of, over a dozen.

MR. GRANIERE: Okay. And as for larger, how much is bigger than 25?

MR. WALLACE: Just over 100 kW that we've just started with here in Florida.

MS. HARLOW: This is Judy. What kind of customer? Could you characterize the customer that would put in a 100 kW system?

MR. WALLACE: Typically, a New York Stock Exchange Company. Companies like Target, Wal-Mart, Catalina Marketing, that's a firm in Pinellas County. Private European companies. We have some German-based companies that are in, you know, bakeries. So public-owned, private-owned. Typically, these are companies that have electric bills in excess of $30,000 a month. So even a 100 kW PV system is very, very small relative to their bill.

MR. GRANIERE: Let me ask this question. These applications -- I mean, these potential customers that we're talking about here, let us assume that they actually put in a

100 kW system. Would they ever have an opportunity to sell excess, net excess?

MR. WALLACE: Potentially on a Sunday, a clear day afternoon if the business is unoccupied. But typically they have their air conditioning load. So to answer your question, I would say almost 100 percent no.

MR. GRANIERE: What do you think, Tom?

MR. SANDERS: I really couldn't say how much they would be using on a Sunday afternoon if no one was in the store and it was only the air conditioning running. But that would be probably the optimum time for a solar output is the middle of the summer, summer solstice, 1:00.

MR. GRANIERE: So if I hear you right, what you're saying is that it's possible that they would have stuff to sell back on Saturday and Sunday, and maybe some hours of the day, Monday through Friday?

MR. WALLACE: If I may? Wayne Wallace. These are, for an example, office buildings or facilities, again, with, you know, some of these places are -- 30,000, $50,000 a month electric bills. Their air conditioning load alone running on one day is quite incredible. So I would virtually almost say almost 100 percent no. But it is a very, very remote possible chance that they could have a credit, but it's almost impossible, you know, as big as these facilities are.

MR. GRANIERE: Okay. If I understand what you're

saying, is that even if the building is unoccupied, no one is working, all the lights are off, if the air conditioning is running they will be using up everything?

MR. WALLACE: Typically, yes.

MR. GRANIERE: Okay. Now, on these 100 kW systems, what are the things that you have run into that you would like to streamline?

MR. WALLACE: Well, if I can answer that. Wayne Wallace.

Again, when we get the qualifying facility agreement from the utility, again, I've seen one utility that, if my recollection serves me correct, was over 100 pages. I mean, what I see here that you all have in your thing here is only, you know, one, two -- one, two, three, four, five, six, seven -- five, six pages. I've seen another utility that has in excess of 30 pages. You know, there's fees involved. We don't know what the fees are. It's very complex and very complicated.

There's a lot of unknowns that we simply don't know. Sometimes just to get those answers through the utility could take a couple of weeks just to find the proper person to speak to. When we forward that document to our potential customer, it can take them sometimes, you know, weeks just to review it. And it's very gray, and there's a lot of questions, and it's very complex and very complicated.

Our sales process is certainly not streamlined with it at all. So it makes it very complicated. It's a roadblock for the development of solar energy in Florida.

MR. GRANIERE: Okay. I think I understand what you're saying, that it's long. It takes time. But, I mean, isn't it true that there are certain things that you just have to take time to do? I mean, sometimes you just have to negotiate a contract. And sometimes you just have to do things that are unique. I guess what I'm trying to find out is what is it that's common in these larger applications that say they can -- they don't have to be treated on a case-by-case basis?

MR. JONES: Bob, can I address that? Jeremy Jones.

I think from the success of some other larger interconnection programs, there's probably three items that the industry would typically be looking for. The first Wayne kind of hit on, a fairly simple boilerplate application form, because generally there aren't a lot of differences from one system to another. Allowing safety measures -- and I know we're going to talk about some of the technical issues later, but just as the bulletpoint, allowing UL 1741 (phonetic) inverters to interconnect with a fairly straightforward process, because they typically have the protection required already built into that device.

And then a fee simple approach. I don't think anyone is necessarily opposed to some sort of a processing fee for,

you know, having a system interconnected, but not having cost-prohibitive ongoing charges and so forth that would make installing the system cost prohibitive.

MR. GRANIERE: Okay.

MR. BROWN: This is Michael Brown. If I could add something real quick.

MR. GRANIERE: Sure.

MR. BROWN: Just a suggestion. Maybe the engineering process could be opened on systems that come within 10 percent of the actual electrical service for the facility. Because, see, the thing is, is if we're dealing with the size of a system like Wayne was describing, a 100 kilowatt system would be less than 10 percent of that load.

MR. GRANIERE: Okay.

MR. BROWN: So, you know, I mean, we're talking about something that would not tax the system, or would not require any safety issues, or modification to the line side. But if we come within 10 percent of the building's load requirement, then we could possibly have some issues there.

MR. GRANIERE: Okay. So if I understand what you're saying, you're saying that there is, in your mind, a percentage out there where on-site generation does not represent a threat to--

MR. BROWN: Correct.

MR. GRANIERE: -- the grid?

MR. BROWN: Yes.

MR. GRANIERE: But we don't have that number yet, but that's your general position?

MR. BROWN: Yes.

MR. GRANIERE: Tom, what do you think of that?

MR. SANDERS: That's a pretty good characterization of the issue is that as long as the system can be expected to shut down when it's isolated with its own load, then it's much less of a safety threat, assuming everything works like it should work.

MR. GRANIERE: Okay. Okay. Anybody at the table, tell me if I'm wrong when I sort of summarize this way. It says that large systems aren't necessarily bad as long as they are part of a very large electricity user to begin with.

SPEAKER: That's a good characterization, Bob.

MR. GRANIERE: Okay.

MR. WALLACE: Yes, Bob. Wayne Wallace. In fact, it's really almost the same as a residential system. If somebody has 200 amps of service, we do a two, three, four, five kW system for them. Here's a commercial place that has their own giant transformer, and they're, you know, 30 to $50,000 a month electric bill. It's kind of a relative size, if you will.

MR. GRANIERE: Okay.

MR. WALLACE: So it's just -- the only difference is,

it's just a larger system. Everything is being the same. It's installed, you know, it's IEEE, it's UL, it's NEC.

MR. GRANIERE: Okay.

MR. JONES: Bob, Jeremy Jones. Real quick. I think the Connecticut program will allow up to -- and I can provide the exact number. I believe it's 90 percent of the building's load. And they will allow -- serve their simple interconnection up to that level, and higher becomes a more complicated issue. But we could provide some examples of how that's been handled.

MR. GRANIERE: Okay. Let me see if I heard you right. You're saying that if the system -- if the on-site system serves nine-tenths of the building's load, there's no safety issue?

MR. JONES: I believe that's how their program is set up.

MR. GRANIERE: What do you think of that?

SPEAKER: That seems too high to me. There could be many instances in that case where the building's load, just because of facilities being off, would be less than the output capability of the facility, the solar facility.

MR. JONES: And in coordination with a net metering policy, I don't see how that would be a risk to the grid necessarily. It would just mean that occasionally you may export power, which you would then later consume through -- you

know, assuming that there were a net metering policy in place.

MR. GRANIERE: Well, I guess we've got something we could talk about here. Because, you know, it seems like these numbers are pretty big. I mean, this is -- this is a fairly large range from 10 percent to 90 percent. It's kind of a big range.

SPEAKER: Again, I think that the goal was to -- that a number somewhere like 90 percent would allow you to size a system such that it might provide over the course of a year nearly all of the energy that you need on site, but not additional energy.

MS. CLARK: Bob, this is Susan. Just to be clear in my own mind, I thought today we're talking about interconnection and sort of separating that from the issue of net metering.

MR. GRANIERE: Right. And that's why I'm confused. You know, I understand the notion of the 90 percent, but what I thought we're talking about here is that we have a system on there that is going to provide most of the need. It's a big system. In other words, it's a big electricity user, and is there any special things that need to be taken care of on interconnection precisely because it's a big system that serves so much? And I think the point you're making is that if it goes down improperly or something that could be a problem. Is that's basically what's going on here?

SPEAKER: Bob, the concern we have there is if it is a big system, and it's using -- serving, essentially, a lot of the customer's load, then when the customer's load is at a much lower level, then it could be having a larger flow back to the grid, which then could be a problem if there's a problem with the grid. In other words, if we open up the section of the grid that serves this area, and you have a large system connected that may not shut off automatically, then we have a concern with that.

MR. GRANIERE: Okay. Okay. I think I understand now.

MR. JONES: This is Jeremy Jones.

We would agree that the system, if it were that large, would have to have safety and interconnection compliance to ensure that it would not continue to operate in the event that the grid were off. And most of the industry equipment at this point already has that inherent to the design.

MS. HARLOW: This is Judy, and this is for the solar guys. I just want to get a feel for what the market is like today. Is it a common practice or is anyone putting in a system that's 90 percent -- capable of handling 90 percent of their load today, other than perhaps a small residential customer?

MR. WALLACE: This is Wayne Wallace. I can help answer that. We don't see -- in fact, I don't know of any

commercial application in Florida, if you guys do, I don't know, that serves up to 90 percent of the load. Looking at a large facility like that that we were mentioning earlier, the 30,000-plus-a-month customer, I mean, they would have to have a 10, 20, 30 million-dollar PV system, and the economics just aren't there presently today. So, again, a 100 kW system is a very small percentage of -- you know, talking about these 30,000 and up monthly customers. It's less than 10 percent completely on their annual bill.

I think maybe in the Connecticut thing, I was thinking about that, maybe that's an annual thing. Because in Connecticut in the winter months there is some, you know, solar energy available. It's very low, so maybe -- I don't know maybe in the summer months that they might get 90 percent. In the winter months they might get one percent. I don't know.

MR. HINTON: This is Cayce Hinton. I was curious whether there is a threshold point where we can look to safety as an issue as far as the amount of energy being put back into the grid. If we're talking about a PV system that's providing 90 percent of a customer's load and whether it's residential and they've got a, you know, a five kW system on their house or commercial, they've got a 100 kW. Say the residential customer goes on vacation one day, turns everything off, so everything they're producing is going back to the grid. When is it a safety issue at that point? Is it just as long as it's a five

kW system there's not really going to be a safety issue, but if it's a 100 kW system there is a safety issue? Is there some threshold there that we can look to as a point of, you know, we're going to be endangering the grid if that amount of energy is allowed to go back?

MR. SANDERS: This is Tom Sanders. Well, currently we have the 10 kW limit, which experience in the industry has shown is acceptable for an application. So, once again, we're comfortable with that, and a larger system is just something we just haven't had a lot of experience with.

MR. REEDY: Bob Reedy with a comment. As long as it meets the very stringent design standards for anti-islanding, there really can't be a safety issue concern. The safety issue is backfeed. Up to the point of the system being disconnected and a backfeed scenario developing, we're just talking about a feeder that has less flow from the substation transformer out to the customers. So there's not any issue that you can have regarding safety. So it's a moot point unless there is an island scenario.

Basically, the power lines are pretty dangerous to touch, whether it's being backfed -- I mean, whether there's flow from the customer or from the utility. They're high voltage and that's the safety issue.

MR. WALLACE: This is Wayne Wallace.

I'd like to just comment, also, with what Bob said.

Our five kW inverters, 10 kW inverters and 125 kW inverters have the same safety design features in them, anti-islanding. They are UL approved. Oftentimes a lot of these commercial systems that we see throughout other places, unfortunately not yet in Florida, they are multiple 42 kilowatt inverters that are -- I mean, the safety is the safety, so if the -- I mean, if it's a five kilowatt or 100 kilowatt, it's all the same.

MR. GRANIERE: Okay. I think we're -- I'm getting lost in trying to understand this, is that there's this safety issue that has to do with something happens in the network, and because of what happens in the network, these systems have to shut off automatically. That's safety issue number one. That's that islanding thing, right?

And then there is the other -- and then tell me if I'm wrong here. Is there another safety issues associated with a large unit just selling into, just pushing back into the distribution system when nothing is going wrong, it's just pushing back in?

SPEAKER: Nothing really wrong with that.

MR. GRANIERE: Nothing wrong with that. Okay.

Any more questions? Okay.

We get to this somewhat more technical -- not technical, more complicated idea. Let's say, just as a hypothetical, since the numbers we've been throwing out range from 10, 25 and 100, that seems to just say that there's three

tiers here. There's the zero to ten, there's the 11 -- well, the 10.01 to 25, and the 25.01 to 100. Okay. That seems like there's three natural tiers there.

The question that I have is that if we were to streamline up to 100, and we were to find an expedited way up to 100, should the streamlining and expedited procedures be the same for all three of those tiers, or should there be differences between the tiers?

MS. CLARK: Bob, this is Susan. I guess when you describe these natural tiers, it seemed to me that -- well, why are they natural?

MR. GRANIERE: They're on -- well, first of all, it's just a hypothetical, as I said to begin with. And all I'm using is the numbers that other people have thrown out. So if I were to justify my numbers, I would say the ten number is justified because it's already there.

MS. CLARK: Right.

MR. GRANIERE: The 25 number is justified because it takes maximum advantage of the current Florida rebate program. And the 100 number is justified because there's a person here saying, of course, not subject to cross-examination and everything, but saying that there are these 12 or so customers out there who are looking to do 100. So natural in that sense, just that sense. Okay. So it is a hypothetical.

MS. CLARK: Okay. Well, given that, let me just give

you a general answer to that. The experience that the utilities have with the 10 kW and lower shows that a standardized process can work so long as the equipment to be connected can be standardized. We also believe that it's possible to standardize or streamline the process for something larger than the 10 kW as long as it can be done through a qualified inverter. But we would say that we need further experience before we can determine what that size limit should be in terms of the kilowatts.

MR. GRANIERE: Okay. Could that experience be obtained through studies, or does it actually have to happen in the field?

MR. WALLACE: This is Wayne Wallace. Maybe I could add to that. In California there are literally within the last year dozens and dozens of systems installed in excess of 25, 50, 100 kW. In fact, right on PG&E's system. Of course, they are the largest in the country that have systems interconnected, PV systems. So as far as the -- you know, maybe the local utility -- or Florida utilities don't have experience, but we can certainly help get that information to the utilities in Florida to see what, you know, in California they're doing, specifically PG&E, to say, look, here's a track record. Here are inverters. Here are some solar program managers at PG&E and other utilities in California that have been doing these systems now for -- well, for seven years plus

almost, some of them.

MR. GRANIERE: Well, I guess -- I understand that things larger than 10 kW have been installed. I understand that. I don't think we're talking about the fact whether they can be --

(Tape change.)

MR. GRANIERE: Of course they can be installed. What we're trying to find out here is that if they're installed under a streamlined, expedited, standardized procedure, is there any danger involved? We've already established that installing them under the current QF procedures do not create a problem. That's what was just said. We're trying to find out is that if we were to give up the QF procedures and go to something that's more standardized, more expedited, more streamlined, is it still just as good? And then the question becomes do we need laboratory experience to find out if that works or can this only happen with field experience?

MS. HARLOW: Tom, this is Judy. I have a question for Power and Light. How large are the PV units that you guys are putting in to comply with the requirements for your RIM pricing program, and how far along are you with those systems and would that help the utilities in gaining experience? Even though it's not an outside party installing those units, it seems like there would be knowledge to be gained from putting in your own systems that you're doing now.

MR. SANDERS: Unfortunately, I'm not very familiar with those particular installations, but every additional installation that you make above 10 kW adds to the experience level. And as anybody that does a cursory evaluation of a project can tell you, if they've done something similar in a similar environment, it makes the study quicker and more accurate.

MR. GRANIERE: Okay.

MS. HARLOW: I believe my recollection is that those systems are 250 kW, but I'm not -- I'm not sure.

MR. REEDY: Bob Reedy with a comment. Well, actually two comments. Frequently, the larger systems are assembled from a composite of smaller systems. One of the nice things about PV systems altogether is they're very modular. You can add a 10 kW block, and then another 10 kW block, and then another 10 kW block. And there are design reasons that favor, instead of one large inverter, for instance, a 100 kW inverter, that favor a series of smaller ones. And generally that's the trend is some blend of larger than you would see on a residential installation, but not one massive set of inverters and such. So that's the first comment.

The second is systems eligible for the rebate in Florida have to be certified and reviewed by FSEC under the current regulation. And we would propose that that certainly could continue and do a lot to address the issue of safety and

compatibility with different codes and those issues.

MS. HARLOW: This is Judy again. Would FSEC have the resources to inspect larger systems that were interconnected?

MR. REEDY: We either can or will. We're mandated to do that, so that is our charge. We currently do, because there are not that many systems going in, but we might have to ramp up -- we hope to be able to ramp up actually as growth occurs.

MR. WALLACE: This is Wayne Wallace. I'd like to comment. A couple of designs that we have already worked on for systems larger of 100 kW, working with the solar module manufacturers, the solar inverter manufacturers design from wire size for modules all the way down to inverters and input into the existing load centers the design review process to the building departments. You know, this is something that -- you know, here we are licensed contractors, solar and electrical, and doing everything to code, submitting designs, engineering drawings, mechanical drawings to building department, the design review at the building department alone can take two to three to four weeks.

These systems are to code. Safety is looked at. These electrical engineers at all the building departments throughout make sure our designs are proper, safe, and these are installed the way they should be installed, just like they're doing in California. So to me they're just like small systems, it's just they're larger.

MR. GRANIERE: I think that's the central question, are the larger ones just like small systems? That's what we're trying to get to. Because if the larger ones are just like small systems and expedited and streamlined works for small systems, then you would think they would work for larger systems. But if they aren't just like small systems, then there may be something different. And we're sort of spinning our wheels here on this one, because I'm not hearing a definitive answer here. Either these larger systems -- either there's a position out here that the larger systems are not the same as the small systems, or it is a position that they are the same. And I just need -- I mean, I'll be frank to say that I'm not hearing an answer to that question by anybody.

MR. REEDY: Bob Reedy. The answer is yes, they're the same. It's a composite of smaller systems.

MS. HARLOW: So is the concern then from the standpoint of the percentage of the customer's load? Because earlier we had numbers thrown out about other states' rules, and they have a criteria based on percentage of the customer's loads. And I'm new to the subject, so tell me why that -- bottom line, why would a regulator want to put that in?

MR. JONES: I think the goal there was not a safety concern necessarily, although you certainly want to make sure that if you have 100 kW service, you're not putting 500 kilowatts of solar on it and potentially overloading that line.

So there is a safety concern in it, but they also just wanted to make sure -- Jeremy Jones again -- that they're sizing the system to use that energy on-site, not to be a generator. They're not a utility, they're not a power plant, they're trying to generate their own energy. But there probably is an inherent safety issue with making sure that the system is not so big that it's producing too much power for the line coming into that facility.

MR. GRANIERE: Yes.

MR. POPE: This is Bill Pope with Gulf Power Company.

I wanted to kind of clarify some things with regard to the different sizes of systems and the standards. The standards that cover the inverter-based devices is IEEE 929, and it has three distinct breakdowns of sizes. And the zero to 10 kW, the distinction between it and the next bracket, which is greater then 10 kW to 500 kW, is in the protection of clearing times for the devices. It's a little more lenient in the zero to 10 kW. It gets a little more quicker and faster in the 10 kW to 500 kW. So they really aren't the same, but we, as the utilities, are not uncomfortable with that. I think what we need, and Tom Sanders referred to it, is a little more experience with those systems. And I think that, and I'll speak for Gulf Power Company, that we, as the utility, are willing to get with the solar people and look at the inverters and see if we can find a way. The issue is can we streamline

something. I think that that's where we need to focus.

MR. GRANIERE: Right.

MR. POPE: And I just wanted to clarify that.

MS. HARLOW: Mr. Pope, while you are here, yesterday we heard that IEEE Standard 929 was superseded by -- I'm looking at my notes, 1547. Do you agree with that? And this is Judy.

MR. POPE: This is Bill Pope again.

No, I really don't, because IEEE 929 specifically deals with inverter-based devices, and it could be solar, it could be windmills, it could be fuel cells. But they focus on the inverter itself as the device. And it not only covers the protection part of it, but also some things about wave forms and harmonics that are different than IEEE 1547. So they somewhat overlap, but it has not been superseded, no.

MR. GRANIERE: Okay. And what does the 1547 -- how does that differ?

MR. POPE: It mainly deals with rotating-type devices like your generators, your home generators, and things like that. And I've heard some references to UL 1747 -- 41, 1741, and I may not have gotten the latest information, but I think that UL is looking at larger than 10 kW devices, but I'm not sure that they're actually putting their stamp on larger devices. Maybe you all could help me with getting some information about that.

MR. GRANIERE: And when you say larger than kW, you mean --

MR. POPE: Larger than 10 kW.

MR. GRANIERE: What's larger? I guess I'm losing -- what's the device you're talking about?

MR. POPE: The inverter. The inverter --

MR. GRANIERE: The inverter. Okay.

MR. POPE: The output capability of the inverters larger than 10 kW.

MR. GRANIERE: Okay.

MR. WALLACE: This is Wayne Wallace. We're happy to forward as much information as we can to help the communication to streamline this. Thank you.

MR. GRANIERE: Okay. Great. So I guess what this says is that the idea is that there could be like field pilots on this? Is that a general -- does that feel fair to say that there would be like -- one of the things we could do here is field pilots on streamlining?

MR. POPE: This is Bill Pope again. I believe so. I think that we can provide some written comments later as to --

MR. GRANIERE: Okay.

MR. POPE: -- where we kind of get -- go there.

MR. GRANIERE: Okay. Great. Thank you.

MR. BROWN: Just one addition. This is Michael Brown. All the cut sheets for the larger inverters that would

be used in a commercial system, they're compliant to IEEE 519, 929, 1547 and UL 1741, and they're stated as such. And I only have one copy of these cut sheets with me today, and I'm leaving at lunch. So, like Wayne said, if you get me your information, or Wayne, or even Jeremy, we all have -- we all have access to this information.

MR. GRANIERE: Can we get that, and we'll make a copy and give you back your one copy.

MR. JONES: Jeremy Jones. And the UL 1741 mark is being applied to all range -- and I know that you were just touching on that, but there are 500 kilowatt inverters that are UL 1741 approved and stamped (phonetic) as such.

MR. BROWN: And pretty much we hit on this yesterday -- this is Michael Brown again -- is that the industry is overengineering everything now. And pretty much if you go in and buy the smallest grid tie inverter that you can find, it's going to be compliant to all these issues. And it's just because the industry is expecting people to build on these systems.

MR. GRANIERE: Well, you know, I don't have a problem with something that's safer, more safer, more safe, I guess, rather than less safe, I mean. So, I personally don't have a problem with that. Maybe I'm wrong, but, you know, I've seen situations where you literally do have hot wires lying on the ground connected to those big yellow machines with unskilled

people taking power off of them. So, yes, you know, I would like to see a little more safety rather than a little less safety. So overengineering for me is not a bad word, but that's just me.

SPEAKER: I agree.

MR. REEDY: Bob Reedy. And as was said, the rotating machines are really a big concern, because they often have the -- there are a lot of factors that go into play when you have a rotating machine driven by an engine, for instance. And it's our observation, though, that inverter-based systems, no matter how large they are, are incredibly safe and well situated to feed into the grid. So we'd be happy to provide all the technical assistance we can in that area, and it wouldn't be coming originally from FSEC. We can just arrange to be sure that national and international projects and studies are available for that.

MR. GRANIERE: Great. I think the next session is labeled as participant benefits. And I guess we could either do this really quickly, and if we can, we could do it before the break. But if we can't, then we perhaps should take a break now. But the question that's just being put forth is let us assume that we actually do streamline these procedures, what benefits do you guys get and what benefits does the utility get? And if we could answer those quickly now, we could take care of this section right now and then take a break. But if

we can't, then maybe we should take a break and come back.

MR. BROWN: This is Michael Brown. I think that anytime you can streamline stuff and offer better service to the public, you're promoting goodwill, everybody is happier. The second that you gum up the works for anybody or delay things, everybody gets upset. It's not just a convenience factor, though. You do have some issues about somebody, say, they invest all their money on the front end, and everything, and there's not a set time frame that they can expect things to be done on the utility side. Then they're up in the air, and there is confusion. And they could have a viable system that's 100 percent compliant, it has passed inspections and everything else, and yet they can't intertie it, and they can't utilize it for an undefined period of time. So streamlining is -- it's good customer service.

MR. GRANIERE: Okay. Does streamlining increase or decrease your costs?

MR. BROWN: It increases the costs because you end up working a lot more with the customer, and also working with the utility. I mean, if a customer calls up and they say I have an issue, they've put forth a substantial investment, you can't just say, well, just wait. Wait. You have to take your time out and go and talk to the utility, too, and make nice with everybody. So it's a time consumer is what it is. Not having it streamlined actually adds work to the contractor or the

retailer.

MR. GRANIERE: So streamlining would reduce your costs, not increase them?

MR. BROWN: Yes.

MR. GRANIERE: Okay.

MR. WALLACE: This is Wayne Wallace.

If I can add, streamlining this interconnection agreement above 10 kW to whatever it is, 100, or 200, or whatever, definitely helps the public, specifically corporations, businesses that like to do solar. It helps them expedite their goals to leave an environmental footprint. It helps them take advantage of the Department of Environmental Protection rebate. I believe it helps the utility with their peak demands, because solar throughout the day is, you know, helping shave off some of that.

MR. GRANIERE: You know, I understand that, but that's actually putting the system in. What I'm talking about here is what benefits do you get by streamlining it. So are you saying that streamlining these procedures will get you more customers so that you could put more of these things in the ground, is that what you're saying?

MR. WALLACE: Simply, yes.

MR. GRANIERE: Okay. Thank you.

Utilities?

MS. CLARK: Bob, this is Susan Clark.

Yes, I think the utilities likewise see benefits in standardizing the process in terms of the contract terms and conditions, the physical interconnection process itself, the billing procedures, and any other activity that is repetitive that can be -- if you have done it before, it's easier to do and accomplish on a repeat basis if it is standardized.

MR. GRANIERE: Okay. So we're looking here, saying the potential benefits are on the overhead side, the billing and all that other stuff, and the administrative side, and then, perhaps, some on the actual work side, you know, we actually go and do the physical interconnection. Okay. Great.

Oh. I was just about to go on a break. No, that's okay. I'm only kidding.

MS. SZARO: Gosh, you know how to make a girl feel important. Just from the municipal utilities' prospective -- Jennifer Szaro -- we feel that streamlining the process would really give the municipal utilities a great deal of assistance in following some guidelines for systems of different sizes.

Right now I'm rewriting our interconnection standards, and I'm having a heck of a time, because we don't know what to do with the larger systems in the two megawatt to 20 megawatt range. We need some clarity on that. We need some clarity on systems that are three-phase.

Do we keep those under the simplified interconnection or, you know, do we bump those up to a different level? So

right now we have our interconnection standards set for 20 kW and smaller under one tier, and then it goes up after 20 kW. We're looking at changing that to 100 kW, and we would really love some guidance from the Public Service Commission on appropriate standards for the different sized systems. So we would like one standard. That way if a vendor is doing business in several different territories, they can all kind of know what to expect. It also saves us money on our legal staff, so --

MR. GRANIERE: Okay. Okay. Thank you. Okay. Great. How about a ten or fifteen-minute break?

(Recess.)

MR. GRANIERE: Okay. Thank you for returning. And we have another speaker here who would like to sort of give his insights on the difference between 10 kW and 100 kW units. This is Mr. Cowart from the City of Tallahassee Utilities.

MR. COWART: Thank you. Yes. This is Ben Cowart, City of Tallahassee.

And I'll have to preface my statement by saying that I'm just a dumb old mechanical engineer and not an electrical distribution engineer. But it seems like I got lost in the discussion on the difference between a 10 kW and a 100 kW system on the system.

And I think the issue that needs to be discussed or at least needs to be aware of is that when you design your

distribution system for the users and the load that's there, you do that to serve 100 percent of that. And you start taking, whether it's 10 kWs off or 100 kWs off, and your system then, when you go to look at adding that next, say, big commercial unit on there, you look and see, well, my system is not overloaded, I can handle that.

You add that next load to the system, and now say the 100 kW system goes off-line. That host is now pulling their full 100 percent of their power needs, that could get into a, you know, low voltage situation that I think gives -- to me the gist of the question of what is the safety, the safety is not in the inverter or, you know, what comes with the system. Sure. You don't want to, you know, shock anybody on a -- you know, become an island. But the system is if the host has to start relying on the utility for 100 percent of their power needs, what is that going to do to the system as a whole? Is that going to be browns, you know, low voltage situations.

And I think the issue that I was trying to reconcile through the safety is that, the protection of the distribution system for that circuit. And if you get too many on there, and you're relying on those systems to work, when they are not working, you know, what's the effect of that.

I appreciate the time.

MR. GRANIERE: Anybody care to respond? I think what I'm hearing is the situation was you have this user who

apparently is important to this part of the distribution system. What happens if that person were to go off line unexpectedly? Would that hurt something, I guess, is what I'm hearing. Because what I'm hearing is the situation that says I have -- I am so close to my limits that I cannot tolerate any unexpected outcome, which generally we can tolerate unexpected outcomes because we have things called reserves, and things like that. So the situation that I'm hearing here is that there's not enough reserves to take care of an unexpected outcome where the unexpected outcome is a customer going offline who is normally a self-generator and now asks for power from the utility.

MR. COWART: Or a partial. It doesn't have to be a 100 percent self-generator, but just a partial. If their solar system goes off line, what's the effects to that distribution system?

MR. GRANIERE: Yeah. So, basically, here's -- basically, the issue that I hear being raised is not that the system has a problem --

(Tape change.)

MR. GRANIERE: -- on its own, what does the system do?

MS. CLARK: Bob, I understood his point to be that you could have low voltage problems in a discreet distribution area depending on what happens to an on-site generation where

you design the system to meet the load with some expectation that that load is going to be met on-site. And then when it's not, the distribution is not there.

MR. GRANIERE: Okay.

MS. CLARK: Or it's not adequate. But Tom has a better explanation, and it's a different one, I think.

MR. GRANIERE: Uh-huh. I just hope it doesn't matter. I mean, moving right along now.

MR. SANDERS: I hope we can continue to serve the load. This is Tom Sanders.

I know that's one of the provisions of the current rule is that no one is allowed to connect without us giving them written notice that it's okay. And when we give them an okay, then that implies that we know they are there and we should plan our system accordingly so that when they're not there, we can still serve all the load, and that's also where the standby service rate comes from.

MR. GRANIERE: (Inaudible.)

MR. SANDERS: Someone has got to pay for that.

MR. GRANIERE: Absolutely.

MR. SANDERS: So that's it.

MR. GRANIERE: Okay. Okay. But that is generally the idea. And that is the support for a standby charge. The support for the standby charge is that knowledge of their existence requires planning for their absence is essentially

what happens. Am I right?

MS. CLARK: Yes.

MR. GRANIERE: Okay.

MR. JONES: Jeremy Jones.

I'd like to question -- the standby charge, I'm curious if it is necessary, because typically a PV system will have a very limited effect on a customer's demand charge. So when you look at a commercial customer, because of the method for calculating demand charges, it's usually done over, you know, highest demand over a fairly small interval. So they're typically still going to be paying a demand charge very similar to what they paid before they started operating a PV system. And my question, I guess, is would that not cover the capacity requirements that the utility needs to have on standby?

MS. CLARK: Bob, when you talk about capacity, are you talking about generating capacity or are you talking about the capacity of the distribution system?

MR. JONES: Well, the customer's actual demand that the utility is charging to them, the kilowatt measurement. That demand measurement is unlikely to be reduced very much as a result of the resource.

MS. CLARK: You know, Bob, I'm going to venture into an area that I'm -- you know, it's something that I understand at the time when I'm working on something that's rate related and when I'm not, it's less clear to me. But there is a

consideration of demand on the transmission and distribution system that is considered in rates. So you have a demand factor in that type of facility, even though it's fixed and does not change -- that particular facility does not change in output. You have to size it to meet the demand, and you incorporate that in the different charges you charge to different rate classes. And then, of course, you have a demand charge that's related to the generation.

MR. GRANIERE: Okay.

MS. CLARK: I guess what I want to say is that it's a complex analysis to determine the cost of service and to determine the cost of service that is appropriate to use when developing your standby rates.

MR. GRANIERE: Sure. Let me see if this makes sense from what I heard so far. It says that the presence of these people is recognized up front in the planning process. Is that correct? Okay. And since it's recognized up front in the planning process, there has been investment made in anticipation of how they need to sell them. Is that correct?

MS. CLARK: Yes.

MR. GRANIERE: Sell to them. Then what happens is that when the base rate is calculated, I presume that additional investment to serve these customers is excluded from the base rate and somehow captured in the standby rate. Because if it's not excluded from the base rate, then it has

already been captured.

MS. CLARK: You know, I think you're mixing terms that you can't mix, base rates and standby rates, because I think standby rates are a base rate.

MR. GRANIERE: Okay. That's okay. So, once again, I need to get --

MS. CLARK: As opposed to a fuel or a conservation cost-recovery charge, and that sort of thing.

MR. GRANIERE: Okay. Let me try it this way. We have all of the -- we have all of the infrastructure costs in a pile. And those infrastructure costs include this investment in anticipation of serving these customers. And that's one big pile of money.

Now, we are going to take that pile of money and we're going to split it up into different services. And some of those services are going to be residential services, some of those services are going to be commercial, some of those services are going to be industrial, and some of those services we'll call special. Special being backup and standby. Okay.

So what I'm thinking then is that whatever goes into recovery from standby, from the standby people, are not being recovered from the charges to non-standby people, which means that if you never charge a standby rate, ever, for the whole year, you've basically come up short.

MS. CLARK: By the way you've framed your question,

you infer that one month you might be on a standby rate, another month you might be on a regular -- a class of service rate, not a standby rate. That's not the way it works. You get on a rate, and that's the rate that applies.

MR. GRANIERE: Aha. Okay. Now -- okay. The light just went out over my head. What you're saying now is that the rate class for the PV customer is not residential, but it's standby.

MR. ASHBURN: You dragged me up here, Bob.

MR. GRANIERE: I dragged you up here. Sooner or later I knew you would get up here.

MR. ASHBURN: This is Bill Ashburn.

We're talking cost of service and rates, I'm here for standby. And for the IOUs -- I don't know how the munies, the co-ops work -- for the IOUs, the cost of service is that the standby stays with the class of service that it starts with. Okay. So when you talk about base rates, all the costs just go in the base rates. Okay. There's no separate other group for standby costs. They're all kept there.

Now, what happens is in a rate design we create a standby rate within the same class of service, and we separate customers who have generation and look at them from two perspectives. One is supplemental service, which is when they buy from us under normal circumstances, and standby service.

MR. GRANIERE: Okay.

MR. ASHBURN: Okay. It's all in the same tariff.

MR. GRANIERE: Okay.

MR. ASHBURN: The supplemental service is priced exactly the same way as service when they don't have generation.

MR. GRANIERE: Okay. So like they're a residential customer? Yeah.

MR. ASHBURN: If they're a commercial or a residential customer, the price is exactly the same if they had no generation.

MR. GRANIERE: Okay.

MR. ASHBURN: And that supplemental, the amount of load that's considered supplemental and the amount of load that's considered standby is a negotiation, in a way, between the customer and the utility to figure out how much of their load is being stood by for. And that negotiation entails a discussion of what is their normal service under their meter that they're buying from us; what is their generator capable of; how often is their generator run? There's a lot of give and takes as the customer goes into service. And then that level amount is occasionally changed over time as the generator does better than expected, worse than expected, changes. And this is not just PV oriented, this is any generator.

MR. GRANIERE: Okay.

MR. ASHBURN: Because sometimes their operations

change or they get more steam, or whatever it is. The standby rate is the energy is the same. So when you buy standby energy rates, the energy that you purchase, part of the rate is the same as if it was normal service. The only real difference is in two things. One is a little extra kick in the customer charge because of some extra things we have to do for processing and so forth. It's not much. I think it's like 25 bucks a month or something on the demand charge, which is where we mostly have focused on. The demand charge that's then used, is we use the standard demand charge, and we turn it into a daily demand charge.

MR. GRANIERE: Okay.

MR. ASHBURN: So you take the standard demand charge, whatever it is for each company, and say it's eight bucks, or something like that, and divide it up by the billing days, which is not every day through 30 days, but, you know, the weekdays, because these are all on time-of-use kind of thing, so we only look at the days that would be billed demand or the time of use, which is weekdays, not the weekends.

So you divide by those days, and you get a daily demand charge. So as you use service under standby, under whatever your contractual amount is, you pay a daily demand charge for each day you buy service. Now, that's the -- so if you add up, actually -- if your generator is down the entire month, and you take standby service for the whole month, it

actually turns out to be slightly more for some reason. But it's slightly -- but it's effectively the demand you would have taken if you were under standard service.

Now, to help pay for the standby for the months that you're not running, we basically take that daily demand charge, and it's effectively two days' worth of service. So every month you're paying two days' worth of the monthly demand charge. And then if you use standby service for two months, you've already paid for it. You don't pay any more. But as you use days beyond two days' worth of service through the month, the daily demand charge kicks in. And that's the general structure of how the demand works.

Now, when you get to rate cases, that's just looking back at some historical period or projected period, and all those billing determinants and so forth get factored in to determining what the rates are and the revenues likely to be recovered. So there isn't some separate class, separate calculation of standby. It's driven by the classes of service of where you are at.

MR. GRANIERE: Okay. I think I understand. So it's not exactly an independent class of service that has received its own allocation --

MR. ASHBURN: Right.

MR. GRANIERE: -- of transmission and distribution.

MR. ASHBURN: That's right.

MR. GRANIERE: That has not happened.

MR. ASHBURN: Right.

MR. GRANIERE: That's all taken care of inside the -- for lack of a better word, the standard rate.

MR. ASHBURN: The standard rate.

MR. GRANIERE: Okay.

MR. ASHBURN: And that was really driven in part because the Commission determined way back when we first set them up that they wanted the supplemental service that they would buy to be identical if they didn't have a generator.

MR. GRANIERE: Generator. Okay. So that all goes back in there.

MR. ASHBURN: Right.

MR. GRANIERE: And then each month they pay for two days at the monthly rate, whatever it is.

MR. ASHBURN: Right. 10 percent.

MR. GRANIERE: Yeah. And that's regardless of whether they --

MR. ASHBURN: Use any.

MR. GRANIERE: -- use it or not.

MR. ASHBURN: Right. If their generator runs the whole month --

(Simultaneous conversation.)

MR. GRANIERE: Then everything is hunky-dory.

MR. ASHBURN: Right.

MR. GRANIERE: If, however, they were down two days for whatever reason, they wouldn't have to pay anything extra --

MR. ASHBURN: The same amount.

MR. GRANIERE: -- because they've already paid that up front.

MR. ASHBURN: Right.

MR. GRANIERE: So it's sort of like a -- economists have a word for that, and I should know better as to what it is, but I forget things these days. But what they're doing is they're prebuying two days every day. And if for some reason it goes longer than two days, then they kick in with an additional charge each day. That's only a demand charge, but not an anergy charge.

MR. ASHBURN: The energy charge is just what it would have been, regardless if they were on standby or not.

MR. GRANIERE: It just keeps flowing along.

MR. ASHBURN: Right. Fuel and energy and everything else is the same.

MR. GRANIERE: Okay.

MR. ASHBURN: The Commission determined that 20-what years ago in a docket, and all the IOUs have essentially that design.

MR. GRANIERE: Yes. I know what you're buying; you're buying an option. Okay. Okay. I understand that

you're buying an option. Okay. So the standby charge is buying an option. Okay. Thank you.

MR. REEDY: Bob Reedy with a comment there.

Certainly those structures were assembled not contemplating photovoltaics. They were developed over the years and classically involved self-generating sites that had reciprocating engines or other types, even steam turbines type of arrangements. I think we're all agreeing -- not agreeing, that's not the word you use in this setting -- but there's a lot discussion that we're talking about photovoltaics. And things can be very simple if we focus on that, because the nature of the photovoltaic systems is extremely well-behaved. There's no maintenance. The two days might be a maintenance period, you know, presumption of a maintenance period or something of that nature.

So I would suggest that we could -- if you look at a building as a black box, and you look at the demand, you look at the energy, you look at the time-of-day behavior, you really can't tell me -- if you can't see that there's a PV system on the roof, if you're just looking at instrumentation, I would argue you can't tell me that there's a PV system on that building. And I think the rate class with its demand charge for large -- for commercial takes care of that. I mean, I think that's the way rates are constructed is you look at the demand, you look at the energy, you look at the time of day.

And whatever you do, if that customer was a store that decided to shut down and take a siesta, or whatever, during the hot part of the day, you would not know that they had, as opposed to a store that had PV that came on in the hot part of the day, you wouldn't know it. And your rate would take care of it.

So I would think that if we could do -- talk strictly about PV, things do get simpler. And if you're a residence, I still have trouble with the term standby, because standby in my experience has always referred to predominately an entire generation capability, not a parallel operation. And then we have to be ready to stand by to serve when that unit is down.

I think we're really talking more about demand charges, capacity charges, and they roll all the way through the system from the T&D all the way up to the generation. The demand charges on the commercial class rate class take care of that.

MR. GRANIERE: Yeah. I think I understand what you're saying. I mean, when it's all said and done, you're saying that there should not be a standby charge.

MR. REEDY: That certainly is what --

(Simultaneous conversation.)

MR. GRANIERE: That's what you're saying.

SPEAKER: Can I interrupt for a second? All of our standby rates expect that the generation being stood by is running parallel with us. They're intended to be standing by

for when the generator that is running parallel behind the meter shuts down. That's what the supplemental and standby component of the same rate is about. The supplemental is the amount you're buying from us when your generator isn't running.

Many of our people on standby rates do not have generation that exceeds their peak load. In fact, the Commission requirement was that anybody whose generation was in excess of 20 percent of their site load had to be on the standby rate. People whose generation was below 20 percent of their peak load could choose to be on the standby rate.

In fact, there are many instances where we've told customers who are under 20 percent of their load, you would do better if you went on the standby rate because of the way your system operates. And they freak out about it and say, no, I don't want to go there, that kind of thing. But we evaluate customers who have generation, and it runs in parallel whether they would be better off or not on the standby rate when they are under 20 percent. But when they're in excess of 20 percent of their site load, they must be on it by Commission rule.

MR. GRANIERE: When you're saying in excess, their on site is in excess of --

(Overriding noise.)

SPEAKER: Their generation on site is in excess of their site load, and it is running in parallel. When someone has a generator, and they disconnect from us before they make

their generator hot, we generally call it -- at least Tampa Electric would call that emergency, but probably other utilities call it other things. They do not need to be under the standby rate, because we're not standing by for them. When they turn on their generator on an emergency situation, we're not serving them, so we're not standing by, and they don't have to be on the standby rate.

MR. GRANIERE: Okay.

MS. CLARK: Bob -- oh.

MR. HARRIS: I'm sorry. I was going to ask a question real quick. Larry Harris.

You mentioned an evaluation you have to make. How intensive is that? Is that a huge engineering evaluation or is it something -- we were talking about streamlining earlier. Is this the kind of thing that you all would need to look at each individual homeowner or small business or whatever, or was it the kind of thing that's -- can be pretty easily standardized as a formula if your historical 12-month bill is, you know, 1,000 kilowatt hours and you're putting in this size photovoltaic, you would be this much percentage. And, therefore, this --

SPEAKER: This is not very complicated. The billing people can do it fairly quickly based on billing units, just running it through one rate versus another. And, you know, we'll talk to -- sometimes you can do it in advance when

they're getting ready to go on, and say, you'd be better off here, if there's a choice. In excess of 20 percent, it's not a big deal.

MR. GRANIERE: So it's no big deal.

SPEAKER: It's often when you are doing the standby rate and you have to figure out where -- how much of their load is being stood by for and how much is supplemental, there's some back and forth trying to figure out what's the right number between the two of you. And usually it's just two engineers talking and, you know, they don't always see eye to eye about how the unit is going to do and what their load is going to be, particularly if it's a brand new situation. And so you do the best you can. And then after a few months or, you know, however long it is, sometimes the experience shows something different just based on events, and then you're back to talking to each other again, and you just reset the number.

MR. GRANIERE: Okay. So am I correct in saying that each customer has their own standby rate, so to speak?

SPEAKER: Well, they're on a rate, okay.

MR. GRANIERE: Right.

SPEAKER: But there's a contract you sign to be on standby, and it says here is how much is my site load, and here is how much is my generator size, and that's--

MR. GRANIERE: So it's a negotiated rate?

SPEAKER: It's a contracted amount that you use in

the billing process.

MR. GRANIERE: Okay. Okay.

SPEAKER: And that can change based on events and change in process, and so forth.

MR. GRANIERE: So is there any way to make that shorter, or is that - or is that sort of just one of those things you just have to do?

SPEAKER: I suspect -- you know, again, as we said, size matters, you know, equipment matters. As Bob is saying here, a PV is pretty predictable, you know. And you're going to know how much it runs, how big it's going to be, when it's going to run. It's very predictable compared to someone else who is running a process-oriented load perhaps. So it could be the negotiation with a PV for a standby rate is very quick. I mean, you just know what it is very fast.

MR. GRANIERE: Okay.

SPEAKER: Whereas, you know, a co-generator that's got a process and is growing over time, that could be a long discussion. You know, it just depends.

MR. GRANIERE: Okay.

MS. CLARK: Bob, this is Susan. I think one thing Bob Reedy brought up sort of is an area that I wanted to comment on, and that's the notion of sort of we seem to shift from talking about something that would apply to PVs and something that would apply to all renewable generators. And as

we were talking this morning, it seemed to me important to comment that I think when we were talking about streamlining, the possibility of doing it, it likely will be okay to do it for the PV systems, but if you are looking at other types of generation, the same ability to standardize may not be there.

MR. GRANIERE: Okay.

MR. HARRIS: I'm sorry, Larry Harris again. Susan, just off the top of your head, then, if the staff decided that they wanted to sort of move forward as a first step and have a rule that would apply to PV units, and then we'd call it, I don't know, utility obligations with regard to photovoltaics. And it would include the things we've talked about yesterday and today, these interconnection agreements, streamlining, maybe something to do with net metering.

Off the top of your head is that something that you think the IOUs would support or would you be concerned that that could be used by, then, subsequent different renewables, and you would think that it wouldn't be as easy to get a PV rule out because of all of these concerns that these other generators might have would have to be folded in?

MS. CLARK: Well, I think it's -- Bob has made the point that they're not here today or yesterday to discuss these issues, and if they were important to them, that they would be here. And, certainly, you have an existing -- you've already carved out the notion of PV in an existing rule. And what

you're talking about now is perhaps expanding on that to encourage more PV systems.

MR. HARRIS: I guess the question I'm asking you, then, is let's say you all were somewhat inclined to make some concessions on the -- hypothetically, if someone were inclined to make some concessions on net metering. And you think, well, for these PV systems maybe we can live with the idea of, you know, true -- if the meter runs backward to zero, we can live with that at retail for these PV systems. And let's assume that everybody agrees that it's 25, you know, kilowatt or less. And the utility say we can live with that in concept.

But then if I was a utility, I think my concern would be, am I going to have to worry about other renewables then coming along and saying, well, you did it for the PVs, you should do it for us, too. And, therefore, you would feel obligated as a utility to sort of fight that, because you were worried about sort of opening the door that other renewables could use down the road.

And that's an easy example. And I guess I'm saying if we have a separate PV carve-out rule, do you have to have those concerns, that we can't give too much, even though we would be willing to on PV, because we're worried about, you know, a waste burner, or a phosphate mine, or somebody coming down the road.

MS. CLARK: I think it's always a concern when you

make an exception or do something different, there's somebody else waiting in the wings that also wants to be treated that way. The question then is, is that what the public policy should be? So, yes, it would be normal to be concerned about, you know, opening up the door in one area, and then others that are not similarly situated saying, I would like that, too.

MR. HARRIS: Thank you.

MR. REEDY: And I just would -- Bob Reedy -- I would supplement that.

As a former utility engineer, I've had trouble with a lot of my answers, because what I would say about PV and inverters is different than an induction generator, or some other type of system. So it could get very clear if we were able to make that distinction.

MR. HARRIS: Thus need for this to have been recorded today is so we can begin building a record that we can use if we go down the road of a rule that starts to support what staff's recommendation is on the policy and get us to where -- and I'm not saying staff is going in any direction right now, but if we did go in this direction, we're starting to build a record, and that's why there will be a docket, and this stuff will be in it, and why the sign-in sheets and the transcript are important. So it actually does make sense why we do this crazy stuff.

MS. CLARK: The other thing, when we were talking

before the break about the streamlining, it was pointed out to me that you don't want to go to streamlining before it's appropriate, before it is amenable to a streamline process, because what's likely to result is you streamline it and then find out it's not working, and you have to go back and redo it. So it is important to, you know, conclude that it is amenable to a streamline process.

MR. GRANIERE: You know, I think that's where we got into the discussion of can we do streamlining sort of in a laboratory or do we have to do it in the field. And I think what I heard here was that it has to be done in the field, and that's why we talked about pilots for streamlining above ten is, I think, what we were talking about here. But, you know, so we got to the point that said, no, we couldn't do it in the -- we couldn't do it in isolation, you know, inside a building like this, or we couldn't do it with studies. And the only thing we could do would be to get field experience. But to get field experience means we actually have to do it, which means, whala, pilots or something like that.

So I guess everybody -- so I guess if that's the general idea, that would mean that each utility would have a pilot somewhere along the line on how to do this above ten. So TECO would have a pilot, and Gulf would have a pilot, and FP&L would have a pilot, and Progress would have a pilot. So that we could -- then everybody would get their pilots together and

decide what's working and what's not working, and things like that.

And then the only thing we need to look at from this point of view is that we just don't let those pilots drag on forever, but instead get done in a reasonable period of time. And then somebody will decide what the reasonable period of time is. But that's what I'm hearing. Tell me if I'm wrong.

MS. CLARK: Well, I think what you've also heard is the willingness to work together with the renewable industry to see if --

MR. GRANIERE: Right.

MS. CLARK: -- we can reach some --

MR. GRANIERE: Right. You know, they'll be part of it.

MS. CLARK: -- common ground as to what can work now.

MR. GRANIERE: Okay. Great.

MR. JONES: Bob, it's Jeremy Jones.

Related to the pilot, is there anything specific to Florida that would require us to actually do pilots in the state here, because we don't have a lot of experience in the state with these larger systems, when there are instances in other states within the country that have done all of this before, and it's very well established. Is there an opportunity that, perhaps, we could look to some of those as our guideline?

MR. GRANIERE: Well, I would guess that -- since I'm not designing the pilots, okay, but let's just make believe that I was. Okay. What I would do is I would say, okay, let me go look at what's happening elsewhere and try to get my version of best practices, and then from that best practice, my version of best practice, I'd go out and put that up as a strawman to the other side, whoever that happens to be. So if I'm a utility, I'd put it up as a strawman to the renewable side. If I'm a renewable, I'd put it up as a strawman to the utility side. We would talk a little bit about it. We would get an idea, then we would have a design for the pilot, and then the pilot would go forward.

So the answer is that, in my mind, the best that other states can give you is a set of best practices, but it cannot give you what's good for your state unless you're willing to assume that electricity systems are exactly the same everywhere in the world. And I'm not an engineer, as a professional person, but I'm pretty sure that there is problems in different parts of the country that don't exist in other parts of the country, even though it's an interconnection grid, a western grid, and (inaudible) or anything like that. So the short answer to your question is, no, we need to do the pilots. At least that's what I think.

MS. CLARK: Bob, this is Susan. I would just -- before we jump to that conclusion, I think there should be an

opportunity to see if there is already some --

MR. GRANIERE: Sure.

MS. CLARK: -- mutual agreement on what higher level than the 10 kW can be done --

MR. GRANIERE: Well, I mean, you know --

MS. CLARK: -- in a standardized process.

MR. GRANIERE: You know, all I'm saying is that if -- if we work from a foundation that says in order to get to standardization we need more experience, and that experience has to be in the field, well, then, pilots are necessary. If, however, we're willing to take that support away or that foundation away, and say we can get to some agreement without field experience, okay, that's good, too. You know whatever it has to be, but it can't be going back and forth, back and forth. You've either got to do one or the other, but we've got to do something.

MS. HARLOW: At this point, though, we do -- this is Judy. We do have experience with the under 10 kW systems. So we're much further along as far as experience than we were just a short period ago because of the new rule and the utilities' efforts. And so I think we can use that experience and build on it to move forward with, perhaps, slightly larger systems. The question is at what size system do we have more concerns about safety than a 10 kW system, and I'm still unclear on that point.

MR. BROWN: This is Michael Brown.

I don't know if it's an answer, but here's the reality of it. If you have an old house, okay, just to put things into perspective. If you have an old house -- I mean, say something built in the '40s, or something, say you only have 100 amp service. That's, in effect, almost a 25 kilowatt system, a 25K system. So when you're talking -- I mean, a 250 kilowatt system. So, in effect, these small systems, what's on the table right now is kind of insignificant until you get into the megawatt systems, which is really what the issue is and what the industry really is looking to Florida to do before they take Florida seriously, is they're looking to see megawatts go in.

All of the under a megawatt size, as far as a system design, is cookie cutter for the industry. It's a no brainer. They can come in. They have structures and templates for all that size a system. They want to see some major power production out of the state before they take us seriously. And that's where the issues really arise, and that's where the real study goes in. Because we're looking at systems, and what's on the table right now are systems that are residentially sized. Even if you're talking 100 kilowatts, it's still -- that, in effect, really is like a residential service.

MR. GRANIERE: Okay. You know, I understand what -- I think I understand what you're saying, but I'm -- and there's

no disrespect intended on this particular question. But I've just got to ask it. Is there a megawatt solar system anywhere?

MR. BROWN: Yeah.

MR. GRANIERE: Where?

MR. BROWN: California has some. They're all over Europe, Japan.

SPEAKER: Hundreds of systems around the world are over a megawatt, many over two megawatts.

SPEAKER: There's actually ten megawatt systems in Arizona. I think we were just talking earlier, I think it's, you know, numerous, numerous megawatt systems in this country.

MR. GRANIERE: So there's a ten megawatt solar system in Arizona, is what you're saying?

SPEAKER: It's at a military base. I believe, it's, you know, Air Force.

MR. GRANIERE: Is that true? I don't know.

SPEAKER: I'm not sure. In fact, John Musiello (phonetic), Progress Energy, he and I were discussing it just a little bit ago.

SPEAKER: (Inaudible. No microphone.)

SPEAKER: Yeah. Yeah. A large system.

MR. GRANIERE: A what?

SPEAKER: (Inaudible) megawatt.

SPEAKER: Is that a solar system or a PV system?

SPEAKER: It's a PV solar system.

MR. GRANIERE: Is that one of those concentrated things that goes hmmmm? No.

SPEAKER: (Inaudible. No microphone.)

SPEAKER: It's a tracking PV system.

SPEAKER: (Inaudible. No microphone.)

SPEAKER: Yeah, very large system. It's like a million-dollar-a-year savings in incentives. A government project.

MR. REEDY: Bob Reedy.

Judy, I guess you didn't get an answer directly, and I'd like to try from my view and say that if we are able to partition again and stipulate PV, inverter based, which all PV is inverter based, there are no safety issues. In other words, if it meets the codes, it's inherently -- it's extremely fail-safe and far more -- and as a utility, there are many other issues that can be called safety problems, and this is not one of them.

MS. HARLOW: Well, then we go back -- this is Judy again -- we go back to the customer's load. Is the issue the percentage of the customer's load, the capacity of the system relative to the customer's load?

MR. SANDERS: Tom Sanders.

I know that is one of our larger concerns is the amount of power that would be pushed back to the grid in the event of an isolation.

MS. HARLOW: And, Michael, if I could -- this is Judy again. If I could just get a clarification for what you meant by, "for the industry to take us seriously"? Are you talking about the PV industry building manufacturing plants in Florida?

MR. BROWN: No, I'm also talking about distribution and -- see, right now the rates here, and this came up yesterday, is the price is very high. And in a lot of 0other states and Germany, Japan, the reason -- the company is willing to invest in wholesaling to areas, to districts and stuff. And, also, there is not a huge surplus of product out there. The demand is so high around the world that they're restricted as to where they're actually planning on sending their stuff.

Like Sharpe has some projects going on in Florida, but they're not actively willing to distribute in Florida, because it's just not -- they don't see the market there. And when I posed these questions to the people in the industry, people from Sharpe or Sanyo, there are some multi-junction concentrator type cell module manufacturers in California, and while I would like to see some of that stuff, they don't want to come into -- they don't want to occupy their time on a market that isn't proven. And they don't see the market in Florida growing until there are some significant commercial-sized systems going in, because it's just not going to be publicly viewed. You know, right now there is a large percentage of the public that still thinks that this is science

fiction, that it doesn't work.

MR. GRANIERE: I understand that part. But are you just simply saying that Florida can't get product to build solar systems? Is that what you're saying?

MR. BROWN: Right now we're paying a premium. We aren't getting the same deal as the larger markets.

MR. HARRIS: And if you were able to grow your business by 100 percent, and you start selling -- you know, I don't know what current sales are. You're selling ten systems a month now, and you start selling 100 systems a month residential, you know, these little 100 kilowatt systems. I'm hearing you say you think you would still have the same problems. You'd go to the trade show and tell Sharpe, I'm selling 100 a month. And they'd say, you know, 100 kilowatt units is not even worth our time to put a warehouse in and start shipping and buy the containership and make these really big -- you know, we'll still sell them to you at this premium price, but at even 100 a month, it's not worth our while to put a warehouse and a containership a month of units. Versus if you were able to say we've got not only these residential sales, but we're able to sell these megawatt commercial units. At that point you can get their attention, and Sharpe might think about diverting a containership every six months to a Florida port as opposed to bringing them into California, or something.

MR. BROWN: That's exactly what I'm saying is just as soon as they actually see a physical large installation in Florida. It's like Bob was just talking about, the -- and Tom -- not Tom -- Wayne were talking about the multi-megawatt system in Arizona. It was in the paper yesterday. It's big news. And that's what the manufacturers are looking for. They're looking for a market that is making some noise, so that they can come in and have their brand. You know, they want to brand it.

MR. HARRIS: To clarify my questions, though, you don't see high sales volume on small residential things as making that splash, creating that news that would get their interest and make them really focus?

MR. BROWN: No. In fact, it's not going to happen. The residential sales and everything, and that's one of the reasons why a lot of the contractors don't do a lot of photovoltaics. Most of them concentrate on the water. Most electricians aren't on board because they're making their money everywhere else. There's not a big mark-up on this, even though the price is high. The margin is not there. And the only way that we can actually make sales now is by reducing our margins versus what the industry standard is in states that do have the larger systems and do have the larger markets. So we're actually making less money than them. If we're going to match their rates, we actually make less money than they make.

MR. REEDY: Bob Reedy.

Judy, to answer your question in a different way, we have -- there is one PV module manufacturer that is looking to build in Florida. I don't know who it is, because of confidentiality. But we were given some questions, and the feedback, they were very concerned there was not a net metering law in Florida. And that was a big -- and they're looking to build a plant in the service territory of one of the utilities, obviously, which would be very good for everybody, jobs and revenue. And that was a specific concern they expressed. They still may do it, but that was a concern.

MR. GRANIERE: Are you saying that a manufacturer is concerned about net metering?

MR. REEDY: They're concerned about -- the way the question was worded, and the response was worded, was that they see that as an indication of the regulatory structure of the state and, therefore, the market.

MS. SZARO: Can I -- yeah, I wanted to -- this is Jennifer Szaro.

I wanted to clarify that remark a little bit, as well. I don't think it's necessarily the net metering as much as it is the intention of the state to support the development of a market here. And they view that more along the lines of, I think, interconnection of larger systems as being impedance in the market. And so you get a situation where -- I know that

we've had a few companies come to us and ask about what the state of the market is. Big companies, some of the biggest players in the world.

And, basically, they've said, look, you're not set up for this market. You're not ready for us, and we have larger fish to fry. You don't have interconnection standards for large systems. What they do is they tend to -- on an economy of scale it's cheaper for them to go in, do a third-party agreement with a large system, come in, put a big system in, like a one megawatt system or larger. That gets them, basically, free advertising. It gets them market pool. Then they are able to go ahead and put these volume systems in there.

That's the reason we're not getting volume systems in Florida, is because they don't -- they're going to -- that's their structure. They go in, they put a big system in, they make a big to-do, they get attached to a big program like a SMUD program, or an Austin Energy program, a New Jersey program, a New York program, and they get the market backing of the state or the utility. And then they go in and they put -- the basis of that is that then they go in and put all these little systems in after that.

So if they can't have that structure to work within from a market perspective of having the local marketing support, the state marketing support, and the infrastructure of

interconnection, specifically in net metering, as well, they have told me flat-out that they're not interested. And we've talked about doing a one megawatt in our area briefly, and we're interested in that. And we really want to get manufacturing in the I-4 corridor area for Orlando. And they're just like, well, talk to your other utilities and see if you can make a case, because we're not going to come for one utility.

MR. WALLACE: This is Wayne Wallace commenting.

I'd also like to add it is completely a policy issue. The states that have good interconnection agreements, also good net metering agreements, and even renewable portfolio standards, which that's really a legislative issue which Florida is presently working on, those three things in place make for a good environment for solar development. And, again, that is what, you know, like I said yesterday and continue to say, that's what the public Floridians are asking for.

MR. GRANIERE: Okay. All right. To some extent, let's let reality intrude for a minute. Out in -- where is that, New Mexico, Nevada, where I saw those things. There's quite a bit of land out there, you know. In fact, a neat place is right next where Yucca Mountain is. You know, I'm sure there's quite a bit of land out there, along with quite a bit of sun.

Now, a one megawatt system, how much land does it

take?

MS. SZARO: It doesn't take anything. We put it on a building.

MR. GRANIERE: You put it on a building. Okay. And how much space would that take?

MS. SZARO: Generally the rule of thumb is, what, 100 square feet per kW.

SPEAKER: If I may add, a one megawatt system is about 100,000 square foot, I believe.

MR. GRANIERE: So there's 100,000 -- so, I guess, it's on a big old --

MS. SZARO: We have a site already.

MR. GRANIERE: Okay. So you have a site. So it's on a building, so it's on a roof somewhere. So land is not an issue?

MS. SZARO: No. We can put it on a parking garage. I mean, believe me, there are plenty of buildings, roof space that we could use to accommodate large systems.

MR. GRANIERE: Okay. So why isn't your one megawatt application enough to get this person in --

MS. SZARO: It's not --

MR. GRANIERE: -- when it says it wants more utilities? I don't understand that.

MS. SZARO: It's not representative of the state's policy toward renewables, toward photovoltaics specifically.

They can't do all their projects in Orlando. I mean, they could, but that's not a very good business proposition.

MR. GRANIERE: But wouldn't, like, one project here in Orlando help them out?

MS. SZARO: Well, I'm not saying that we're not going to do it. We are going to do it, but I wouldn't say that that's going to bring the manufacturer to put a facility in Florida.

MR. GRANIERE: Okay. And the one megawatt system, would that require -- wouldn't that be one of those standard, really complicated negotiations?

MS. SZARO: We don't see it as a complicated negotiation personally. I mean, that's where we're looking for some clarification from you.

MR. GRANIERE: So, in other words, what I'm hearing you say is that your position -- you company's position right now is that your company could complete this one megawatt installation in terms of --

(Tape change.)

MR. GRANIERE: -- that you need to do before you make the installation in, say, three months?

MS. SZARO: I think probably three to five months.

MR. GRANIERE: Okay.

MS. CLARK: Bob, this is Susan Clark.

Can I ask a question in terms of Jennifer asking for

clarification from the Commission. As I understand it, you're with Orlando Utilities and --

MS. SZARO: And why am I asking for clarification?

MS. CLARK: Yes. It just seems to me that you can do what --

MS. SZARO: You're right. We can do whatever we want, but we look to the Public Service Commission, and we look to our investor-owned utilities to provide us with some guidance and oversight. And we tend to follow the rules that you follow. So if you're going to do it, we're much more comfortable doing it.

So, sure, we can go out and do whatever we want pretty much within reason, but we would like some standardization in the industry. It gives us something to fall back on, a comfort level that right now I don't feel we have. We're kind of out on our on this, and it's not a very comfortable feeling.

MS. CLARK: I guess one other thing I would ask. I had understood one of the real issues for these manufacturers coming in was the idea that there needed to be more in terms of grants and rebates from the state for the installations of these facilities, but that's sort of just to remind you that those are the other issues that are relevant to their concern about the market.

MR. GRANIERE: I mean, if I'm doing the math right,

there is -- a one megawatt system has, what, a million watts, is that right?

MS. SZARO: That's correct.

MR. GRANIERE: Okay. And the state rebate stops at 25?

MS. SZARO: KW, that's correct.

MR. GRANIERE: So that means that there's 975 kW that aren't getting subsidized then?

MS. SZARO: That's correct.

MR. GRANIERE: You don't need much, do you?

MS. SZARO: (Inaudible.)

MR. GRANIERE: I mean, I'm kind of confused. I mean, it's 975 kilowatts that aren't being subsidized. I mean, sometimes you've just got to say something like that.

MS. SZARO: We're still doing it, but, you know, obviously, it would be great if we could have more --

MR. GRANIERE: Subsidy.

MS. SZARO: I mean, there are ways around that, and we are looking at other financial models to suit our business proposal.

MR. GRANIERE: Okay.

MR. JONES: Bob, this is Jeremy Jones.

Through the federal tax credits and through the sale of renewable energy credits, which is a little bit of an iffy market, but there's opportunities to sell those, the economics

of the system can still work. And particularly at the megawatt size you can drive down the cost of the installed system several dollars per watt compared to a small residential system. So the costs are quite a bit lower. So I do believe that there are opportunities to get systems that large installed if the regulations kind of allow it to be done fairly easily.

MS. HARLOW: This is Judy. I'm wondering about the manufacturers now, and I know I'm outside the industry, so this is easy for me to say, but I have seen some positive happenings in Florida within the last few years. The Commission has put in the 10 kW rule. We've heard from the industry today that this has been helpful. I know that the utilities have interconnected systems, and they're gaining knowledge from that. We also have the state rebates. I've now heard Orlando talking about a one meg system. And we also have Power and Light with their green pricing program, a very successful program.

And I'm having a senior moment, but I think the commitment is 250 kW per every 10,000 customers. And the last time I looked, you guys had between 25,000 and 30,000 customers on that. So that could be three-quarters of a megawatt commitment. So my concern is since we do have positive things happening, what additional would it take to anchor this industry in the state for them to give the state the commitment

so that our customers could get lower prices?

MR. WALLACE: This is Wayne Wallace.

I'd like to make a comment on that if I may. This all really kind of started for Florida with the Energy Policy Act, federal, with the federal tax credits. Commercial businesses in Florida can now get their 30 percent federal tax credit on their investment for solar PV systems specifically. They can get their accelerated depreciation.

With the State of Florida, with the Department of Environmental Protection coming on with their rebate program, even though it's only up to 25 kW, a lot of businesses are looking at doing larger systems. And, again, we just had recent inquiry on numerous 100 kW systems and larger. So when you -- you know, when the industry looks at the state of Florida, they see the federal tax credit, obviously, the state of Florida rebate. The three other things that, you know, would be good to help the solar development in Florida, net metering, obviously, utility interconnection agreement, also, and renewable portfolio standards. With those three things in place, this state is a very viable place for solar PV systems. And that's how the history has really worked in states that have those three components in place.

MR. REEDY: Bob Reedy.

Judy, the single greatest thing, I believe, that would create that sense of credibility with manufacturers of

equipment is a net metering rule that's universal. I think that is the single greatest obstacle today. There are positive things happening, but it's voluntary, and I think that's sort of the litmus test.

An RPS, as Wayne mentioned, would be very helpful. But an RPS is such a bigger issue, I don't believe that the manufacturers, the PV manufacturers are really that concerned with an RPS, unless it had a carve-out for solar energy in it. And that would be the type of RPS that would be attractive to them. Now, I know we're drifting far from the current issue when we start talking about RPS. But you asked the question, and that would be my opinion.

MS. SZARO: I mean, I have to add that I really think that just from discussing, you know, interconnection issues on our part, we have a 110-page interconnection standard at the moment for anything larger than 20 -- or smaller than 20 kW. And I'm trying to rewrite that right now, which is why I'm here. And they don't want to deal with that. They don't want to deal with a 110-page process. So I would really like to see some uniformity across the state in how we handle systems.

I really don't care -- it's not that I don't care, but I don't see the smaller systems as big of an issue for us. It's how do we deal with these systems that are larger than 20K, larger than 100K, for that matter. I've been reading through the FERC requirements and the FERC standards, and I was

surprised that they weren't more addressed here today, because they have draft interconnection centers on their web site for systems through 20 megawatts, and I haven't heard any discussion about that at this point.

But, you know, what is our state doing with regard to the FERC requirements? How are we addressing those issues for interconnection? Does it come into play at all, and if so --

MR. GRANIERE: Well, that's Order 890. And Order 890 says that there are certain things that the state has to do to show that they're in compliance. And Order 890 also made a -- contains a federal statement as to what they consider small, and that's 20 megawatts. That's what they consider small. But we do know that when they're using the word "small," they're thinking of IPPs. They're thinking of people who are prepared to be in the main business of selling wholesale. They're not thinking of distribution-sized connections. They're not thinking of anything like that.

In fact, in order to avoid the interconnection of those units, there must be a showing in the state, as I understand that order, that says those units can sell without impediment into the wholesale market. And if the state cannot show that they cannot sell without impediment into the wholesale market -- the interstate wholesale market, not the intrastate wholesale market, but the interstate wholesale market. If they cannot show that there are not impediments to

that, then the utilities are required to interconnect them.

MS. SZARO: But it doesn't -- I mean, it provides standards for interconnection.

MR. GRANIERE: Sure.

MS. SZARO: It provides example standards for interconnection --

MR. GRANIERE: Sure.

MS. SZARO: -- for three different tiers up to -- is it 100 kW, and then 100 kW to two megawatts, two megawatts to 20.

MR. GRANIERE: Absolutely.

MS. SZARO: So tell me how do those existing sample standards relate to our standards that we have right now in Florida? How they can be reviewed and implemented, if appropriate, for us? And what should we, as utilities, be doing in response to the existing standards? What's expected of us as utilities for, for instance, 100 kW to two megawatt? Well, that may not be an IPP. That may be a customer, according to what I'm hearing. And we want to be prepared with an appropriate interconnection standard to address that size system with that type of customer.

And as far as I can see, I went through everything that I could find, we really don't have anything that's appropriate, other than, you know, something that would be more appropriate for an IPP, which is not what we're talking about

here.

MR. GRANIERE: And that's exactly why we're here.

MS. SZARO: But I'm not really getting any answers. I mean, I'm not really getting any --

MR. GRANIERE: That's because we are here at our first informational workshop. That's because we haven't opened up a procedure to find the answers to those questions. That's because we're just starting. That's why we're here. We don't have an answer. That's why we talked about things like tiers, and that's why we talked about different levels, and that's why we talked about different rules and different tiers and different things for all of these things. No, if you look through the rule -- I'm pretty sure if you looked through the rule, you won't find the answer in that rule to those things. It's more like --

MS. SZARO: Right.

MR. GRANIERE: -- here's what we'd like you to do. There's guidance, but you've got to find an answer. And that's what we're here for, to try to find an answer.

MS. SZARO: But we haven't really been discussing that. We haven't been discussing the specifics of --

MR. GRANIERE: That's because we don't know what we're discussing yet. That's what we're doing right now. We are setting the framework to find out what we will eventually start to discuss. But we need to set it out. We just didn't

come in and say we're going to follow the exact thing that the Order 890 said.

We are trying to find some ground that says here's where we all agree about what we're going to discuss, and, also, where we can make progress. Rather than coming in alternatively and saying, here's Order 890, we're going to do this and go forth and do good things.

MS. SZARO: Well, you know, I'm not proposing that we do that, but I'm proposing that we at least look at the language in the FERC order and ask ourselves how does it apply to Florida.

MR. GRANIERE: Okay. Let me make this suggestion, then. You know, as a utility and a person who has to deal with this, would you be prepared to write a white paper that says how you think 890 applies to Orlando?

MS. SZARO: Absolutely.

MR. GRANIERE: Good. You got it.

MS. SZARO: Bob is helping me.

MR. GRANIERE: I mean, you've got it. You know, you've got it, submit it, we'll look at it. I mean, it will be part of the record. We got it, we'll submit it, we'll look at it, and we'll get the ball rolling on that particular issue.

SPEAKER: (Inaudible. No microphone.)

MR. GRANIERE: Pardon?

SPEAKER: (Inaudible. No microphone.)

MR. GRANIERE: Oh, okay. Okay, 2000. You're right. Okay. One of those interconnection things. Okay. But I do remember the part about are our three lines going out to Georgia enough to put us in compliance? I always wondered about that one, you know. You know, because, you know, Texas has three lines going out, too. I mean, I just wanted to -- just pointing that out. They've got three; we've got three. They get special treatment. We don't. That doesn't sound good. I mean, that's all I've got to say. That doesn't sound good. But that's just an observation.

Okay. All right. It looks like it's -- unfortunately, it looks like it's lunchtime. You know, so I guess we have to come back. So how about an hour lunch?

(Lunch recess.)

(Tape change.)

MR. GRANIERE: Are we ready? I guess not.

Okay. I guess this one -- we've been hinting around this question here. See, I knew we'd get to your question, you just didn't read my agenda. And then you would know that we would have gotten to the question.

The first question in the eligibility is should there be restrictions on the number of tiers that are eligible for streamlined interconnection? The simple way of thinking of this is that should there be a lot of tiers, or just a couple of tiers, or no tiers at all?

MR. WALLACE: Bob, Wayne Wallace. I'd like to respond to that.

You know, I think we've heard from the utilities that streamlining the simple utility interconnection agreement for PV potentially up to 25 kW for residential is something that's possible, I believe. So residential, that's pretty easy, it seems.

Commercially, on the other hand, we want to do what's -- you know, where all parties can win. I don't know where that number is, but, you know, I can throw out a suggestion.

MR. GRANIERE: Okay.

MR. WALLACE: We would like to see, you know, maybe a couple of tiers there I'm thinking. Maybe Bob could help me on this, and other solar constituents. Maybe if you do a residential up to 25 kW, a commercial up to 100 kW with standard inverters that are used residentially -- I mean, it's basically just like a larger residential system. And then from 100 kW to, let's say, two megawatts. You know, things get a little different there, but I think maybe that would be another tier we would look at. So it's just kind of something to look at, some options.

MR. GRANIERE: So I think I've heard a change in position from earlier. If I recall earlier, it was there was no number on the residential, but there was thinking of 25 for

commercial and manufacturing mainly because the commercial and manufacturing at 25 to obtain the maximum benefit from Florida at $100,000. That's my recollection. But now you're saying that you would like -- your suggestion is 25 for residential and 100 for commercial, is that what I heard?

MR. WALLACE: That is correct.

MR. GRANIERE: Okay. I don't forget, see.

MR. WALLACE: And then I also added that third component as another tier, systems of 100 kilowatt to two megawatt.

MR. GRANIERE: Okay.

MR. HARRIS: Something I heard -- this is Larry Harris -- something I heard mentioned earlier was -- maybe it was the same thing, or maybe I misunderstood. I thought somebody had mentioned the idea of doing it as a percentage of the load. Is that something like where the tiers would be, or where the tiers would be something, you know, up to -- and I get confused whether it was 10 percent, or 90 percent, or whatever it was. But is that the same thing or is that an alternative way of doing this where the tiers would not be flat numbers, but they would be percentages. And if that's the case, is that administratively more burdensome? Because somebody has to go out and calculate, or can you just look at the service and say, oh, it's a 100 amp service; and so, therefore, whatever percentage of that is this much. As long

as the PV system is under that, we're good to go.

MR. REEDY: Bob Reedy.

I would just comment that, yeah, if we're a percentage of the service size, then whatever that percentage is. So many things are taken care of in terms of the electrical characteristics of the interconnection. So that if we set a number, I have no particular problem with the ones that Wayne suggested. But practically in the field, what's going on is you have a connection and you have -- everything is designed to handle a certain amount of power flow. And as long as you're a certain percentage below that, it should not matter.

There's an argument for, you know, having a number in your head so that you can always -- you don't have to go look at the service. But that could create a situation where you could actually have a larger -- if you had a tier like 100, if the service was only 75 kVA, or kW, then, you know, you could potentially have a larger export than the service is rated for.

Now, there's a lot of ways to catch that. If you detect a certain amount of ambivalence here on my part, it's simply that we mostly would look for uniformity around the state in whatever was done. Either system probably could work, and there's rationale for going either way, in my view.

MS. CLARK: Bob, this is Susan Clark.

I think the way we approached this was that you

shouldn't arbitrarily set these tiers. What should be the driver is that the same process be applied to generation that has the same characteristics. That's what you would -- that would be what the driver is, not some arbitrary number.

MR. SANDERS: Bob, this is Tom Sanders.

In the same vein as Susan's comment, the 20 percent of the load may turn out to be another designation point just because that point between standby supplemental service being offered or not, and also is a designation of an area where we, you know, feel pretty strongly that it wouldn't be an islanding problem on the grid. So I'm not sure that if that corresponds to a particular kilowatt level, but it's something else to consider.

MR. GRANIERE: Okay. So what I'm starting to hear is that it's getting a little bit harder to find standardization. If we don't go with a kW -- you know, some percentage of the energy usage, and if we don't go with a kW number, but we go with the same process, the same characteristics, then we have to try to -- and that becomes the way we look to do things, in like a streamline fashion, then we need to work on what types of generation have the same characteristics. Would that be fair?

MS. CLARK: Well, I think the kilowatt level is part of the -- is of the same characteristic.

MR. GRANIERE: Okay. Great. So we could -- this is

just a notion is that can we tie it to some sort of number or some sort of concept that's measurable? And that let's us see it, and we always know where it is, and we sort of minimize the role of subjectivity in the process. Is that fair?

Okay. So what we have, then, is that I think what I'm hearing is that we can either go with kWh, or kW, or some combination of the two, which is not unreasonable, either, sometimes. In fact, we actually could do that. We really don't -- but we need to work out where the break points are right now. We just need to work where the break points are. And then once we work out the break points, then we need to work out whether there's any differences or not between the break points. Would that be fair?

MR. WALLACE: Yes, Bob, but may I add -- Wayne Wallace.

Would it be fair to say that residentially we could easily say PV systems, utility interconnection up to 25 kW, because that's something that the utility would be in agreement with?

MR. GRANIERE: Well, I think that right now, since this is an informational type workshop, that we can talk about these numbers. And, you know, it's clear that, you know, the number that -- as an installer and a part of the solar industry would prefer it would be 25. I think it's probably premature to ask for that kind of commitment from the utilities at this

time. And I'm sure that that would occur in a more formal type process. And I don't think there is anybody here who could reach a stipulation like that or an agreement like that anyway. I mean, it is something that you could -- we could put out, something to think about. But I don't think it can go much farther than that right now.

MR. REEDY: Bob Reedy, just to add.

I understand that. And I just think that it would be -- in this informational stage, it's helpful to point out that 100 amps, 240 volts is 24 kW. And many homes can draw more than that briefly or not, depending on how much strip heat they have along with water heaters, electric water heaters and stoves. So, you know, even at -- my point of that informational comment is even at 25 kW, it's in the realm of everything that the utilities deal with at the residential level.

MR. GRANIERE: So I think the way I'm going to interpret that is that says that if someone puts a 25 kW system on their property, that they can do everything. Is that what you're saying?

MR. REEDY: I'm just saying that in terms of electrical behavior, this is very low. It's not pushing any limits at all in terms of what's happening electrically on the system and is dealt with on a daily basis by the utility.

MR. GRANIERE: You know, I guess -- you know, once

again I'm going to say that I'm not an engineer, and I'm not, you know, real good on all of the ways the system works, you know, as to how the power is actually flowing back and forth. But I do seem to know that I don't think I've ever lived anywhere where the demand that was drawn in that place was 24 kilowatts at any one time. I mean, it's usually up there around maybe six.

So I'm trying to figure out why is 24 or 25 kilowatts all that important to a residential person, because I just can't imagine -- maybe I'm wrong, but I just don't know any house that draws that kind of kilowatts at one time.

MR. WALLACE: A water heater is typically 4.5 kW. An oven or range can be, you know, 4 or 5 kW, depending on how many elements are running.

MR. GRANIERE: Okay.

MR. WALLACE: And then if a strip heat kicks in, you can add up numbers quickly.

MR. GRANIERE: Yeah. But I'm just saying that I've lived in those kind of places, and that's what I'm trying to get to. I mean, I've lived in those kind of places. Yeah. You know, I had -- you know, I had a strip heat and I had an electric thing, and I had a water heater in the apartment. That's where I live right now, you know, except that I've got a heat pump, you know, out in front of my bedroom window instead of strip heat, which is there if it ever gets cold enough to

actually have to turn it on. But I'm still finding 25 kilowatts is a pretty big number.

SPEAKER: For residential.

MR. GRANIERE: For residential. I'm still finding that as a pretty big number for residential. I mean, the way you get to that number is everything has to happen all at once. I mean, everything has to happen all at once. (Verbal expression). And what's the probability of that happening? Probably pretty small.

MR. WALLACE: If I may add comment. Wayne Wallace.

I don't understand, you know, why is 25 kW a big number? I mean, let me also add this. Solar panels, solar modules, when we say 25 kW, those are what is like a perfect scenario. The system probably realistically puts out about 17 kW after you go through the efficiencies and the actual sunshine in the area. And then if it's five peak sun hour days per day, that system is probably putting out X amount of kilowatt hours a day. And then it also boils down to like an economy of the whole thing. Most people will they do a 25 kW if the rebate is only 5kW? Probably not.

But there are the very few circumstances where somebody that's very well to do that wants to give back just as a green thing to do, and they may want to do a 20 kW system on a cabana. So, you know, they're a residential consumer, but they've got -- their electric bill is way above that and beyond

that anyways.

MR. GRANIERE: Well, I guess -- you know, I understand those positions. But, unfortunately -- well, fortunately or unfortunately, I could go out in the parking lot, and I can look at a 20 kW system, and it's pretty damn big.

SPEAKER: (Inaudible.)

MR. GRANIERE: Yeah, that's big. That's big, you know. What kind of residence can have one of those things on them? Obviously not a zero lot. I'm pretty sure that's not it, unless the zero lot is really big. So there's a lot of roof space, but that's a pretty big thing up there, isn't it?

SPEAKER: (Inaudible.)

MR. GRANIERE: Yeah, but that's big. That's really big, and it's out there in the parking lot. Yeah, really big.

SPEAKER: (Inaudible.)

MR. GRANIERE: I'm just having trouble with that. I mean, you know, it's something we could talk about, but I'm just -- I'd like to hear from the utilities about, you know, what size they think is a good size for residential. Because, I mean, you're entitled to your opinion as to what size it is. And I'm just -- and all I'm doing is I'm just looking to say this is what I see. And I just never saw that much on any house anywhere. I mean, I never just saw that much on any house anywhere. And I'm just wondering where that would go on

a residential application.

MR. HINTON: Bob, just one thought. This is Cayce Hinton.

A house big enough to put in a 20 kW system on its roof or on its property would probably be big enough to use it, too. You figure if the house is big enough to actually install that much PV, then they've probably got a pretty large electric bill to go along with it. Just a thought.

MR. GRANIERE: And all I'm going to say to that again is that's a real big house. And usually there are other characteristics that go along with a really big house.

MR. SANDERS: Bob, this is Tom Sanders.

And we just have to agree with you that the current 10 kilowatt application seems to satisfy most residential needs.

MR. GRANIERE: So you think that there's a possibility that maybe 15 would be a nice number?

MR. SANDERS: For a really big place, I guess.

MR. GRANIERE: Yeah. Okay. Not quite as big as a 25, though, huh?

MR. SANDERS: When we thought about the 25 limit, we were also thinking in terms of the percentage of load, that maybe the two could together for a commercial application. Maybe that would be, you know, a small step in the right direction where if it's less than 25 percent of their peak load

and it's a 25 kW system, you know, maybe that is an easy pill to swallow.

MR. GRANIERE: Okay. So we'll look into it further. But, you know, I mean, I think we just need to, you know, try to find -- you know, sharpen this up a little bit more.

Okay. How about the -- well, I guess we just got to that one. Should there be a charge -- should there be a change to the capacity size of renewable generators that are eligible for streamlined interconnection? Well, I guess that's exactly what we're talking about. So that answer would be yes.

Okay. Should there be restrictions on the type of renewable energy providers that are eligible for this streamline? Okay. Now, we get back to the idea should this only be focused on PV, or should this be brought out to a bigger set of renewables for streamlined interconnection, or should it be streamlined only for PVs?

MS. CLARK: Bob, I think it makes sense to streamline it to the extent you can.

MR. GRANIERE: For all types or just PV?

MS. CLARK: No, for all types.

MR. GRANIERE: Okay. For all types.

MS. CLARK: It seems to me that one of the things that the IOUs have thought about is if you can do it through a qualified inverter, that probably would be the key.

MR. GRANIERE: Okay.

MS. CLARK: And let me at this point, again, talk about this is not -- we should not tie what we do in interconnection to net metering. They shouldn't be tied as issues that -- if you would do something for interconnection, it doesn't mean you should also allow the net metering. They shouldn't go hand-in-hand.

MR. GRANIERE: I mean, this is -- I'll just say this for me, Bob, personally. I totally agree with you that I think they are two separate documents and two separate things that are done. We could streamline without net metering, and we could, of course, net metering -- we could, of course, net meter without streamlining. So, you know, they're not tied to the extent that they -- you know, you can't do one without the other. What we would hope, of course, is that there is some types that have both, if you know what I mean, both net metering and streamlined interconnection. That would be good. Okay?

MR. REEDY: Bob Reedy.

I'd have to agree with Susan that an inverter, if it's an inverter output, there is no way to really -- they behave the same way no matter what the primary power source for energy is, if it's a fuel cell or any other inverter-based technology in terms of electrical behavior in the interconnection.

MR. GRANIERE: Okay. So I think that probably what

we -- what I think this particular group of staff needs to understand better is what is the real importance of this qualified inverter to all of this discussion. Because I've heard the word, but I really don't know what it means. And so if you could -- if someone could volunteer to help me out and provide us with some sort of brief summary of what that actually does, I think that would be helpful.

Because it's starting to come in, at least for me, to say that as long as these -- as long as there is the right inverters there we're on pretty solid ground. And the right inverter is something called a qualified inverter, but I really don't know exactly what that is. And what I'm thinking is that qualified means it meets all the standards, right? And then, of course -- but beyond that, I don't know, and I don't think anybody on the staff here knows what it means to -- what it means when something meets all the standards. You know what I'm saying? Like, you know, it says it meets all the standards. And I say, okay, well, what does that mean? Does that mean I could spell a big word or -- you know, I don't know. That's what I'm trying to find out.

MR. REEDY: Bob Reedy.

MR. SANDERS: This is Tom Sanders. I wish I was an expert on this particular area. My general understanding is like yours, if it's UL approved and meets IEEE 929 and also 1547, that it's going to be an acceptable inverter. But maybe

one of the solar representatives here has got a better definition for the currently --

MR. GRANIERE: But I'm sure that somebody out somewhere could, like, write a page or two and say what that really is. I just need a volunteer.

MR. REEDY: Bob Reedy. We'll volunteer to do that.

MR. GRANIERE: Okay.

MR. REEDY: And we'll copy everyone and --

MR. GRANIERE: Okay. Great.

MS. CLARK: You want us to tell you what would be -- what constitutes a qualified inverter.

MR. GRANIERE: Inverter, yes. Yeah, you know, beyond just the fact that it meets the standards. I know that, but I don't know what you get when you meet the standards.

MS. CLARK: You mean what safety and what does it provide?

MR. GRANIERE: Yes.

MS. CLARK: Okay.

MR. GRANIERE: Yes, you know -- you know, like I heard it provides certain safety things and probably some other things beyond that, I would guess. And if that's, you know, what we -- so then we could always know what we're talking about when that word comes up, because that word is more than just two words. It brings up a whole mental picture, and the mental picture I get is kind of a blank screen. So that's --

you know, I'm trying to, you know, get us something a little bit more concrete.

SPEAKER: A little bit clearer definition from the utilities?

MR. GRANIERE: Yeah. Okay.

I guess we have touched upon this next question, which was should the streamlined interconnection be confined to on-site or customer-side interconnection, and which would mean that it would be -- it would not be applied to someone who interconnects at transmission. What's the utility's position on that one? I mean, I don't think the PV people have much to say about that, unless they're doing some grid-sized PV application, which would be fairly large. So this has to do with the other types of renewables.

SPEAKER: We feel that it should be on the customer's side of the meter. Of course, we also have some transmission connected customers, too, so --

MR. GRANIERE: Yeah.

SPEAKER: -- it doesn't necessarily have to be only at distribution.

MR. GRANIERE: Okay. So, am I hearing you say that there may be some renewables that we could streamline interconnection on the transmission side, or, no, we cannot?

SPEAKER: It depends how big again.

MR. GRANIERE: Huh?

SPEAKER: It would depend how big again. How large of an installation relative to the customer in particular.

MR. GRANIERE: Okay. So that would mean that you can't streamline it, I guess. See, I guess what I'm having trouble with is a streamline process on a case-by-case basis. You know, it seems to me to be counter-intuitive. So I'm just -- so I'm looking for either a yes or a no on the transmission side. I mean, in general, yes or no.

SPEAKER: At this time no.

MR. GRANIERE: No. Okay.

SPEAKER: A short answer.

MR. HARRIS: Any questions?

(Inaudible.)

MR. GRANIERE: Okay. We have -- I mean, we have one of the -- one of the eligibility restrictions just popped up, which is that if you connect on the transmission side, you probably won't be eligible for streamlined stuff. Are there anything else that we might want to consider as to why some sort of renewable provider might not be eligible for streamlined interconnection?

MS. CLARK: I think it is the technology of it, and can it be standardized. I mean, I guess I've made the jump that when you talk about streamlining, I view it as something that can be standardized. And I think that it -- what I understand is for the higher capacity renewable resources there

is less opportunity to standardize.

MR. GRANIERE: Okay. Okay. So for the higher capacity renewables, less opportunity. But let's use the example that Cayce suggested one day that someone puts a digester in their backyard. Okay. So it would be a little tiny guy, and it would be -- you know, it would be something in your backyard that's, you know, doing things to biomass, and it would look like a PV, but it really wouldn't be a PV. It would be a digester. It would be a biomass thing. And let's say it's less than 10 kW, okay, for now. Could that be streamlined?

MS. CLARK: It would seem to me if the -- I guess if the concerns about the interconnection were the same, and it could use the same interconnection device or process, then yes.

MR. GRANIERE: Okay. So what it boils -- so the technology is not all that important, it's really the interconnection characteristics that are the more important thing? Okay. Great.

Do you guys feel that that's okay? Solar guys? You know, we always like (inaudible). Yeah. It's in there. Everybody wants to make money, right?

Okay. Next, alternatively -- well, I think we've already decided there probably will not be one streamline procedure. That, you know, we'll need to go more along maybe tiers or something like that.

MS. CLARK: Yes.

MR. GRANIERE: You know, if we do that. So the answer to that is no.

Okay. And, on 15, as to what types of renewable energy providers should not be eligible for standby electricity service, I think we answered that, is that since they're buying an option, as I understand it, anybody can be eligible for standby service.

MR. JONES: Bob, this is Jeremy. Can I back up to the last question real quickly?

MR. GRANIERE: Sure.

MR. JONES: If the two requirements are meeting the safety issues and sizing it, whether that's based upon not exceeding too much of the customer's load or not, if those are the requirements, and they're able to be met at a 10 kW level or a megawatt level, and they're the same requirements at either level, then what would be the purpose of the tier?

MR. GRANIERE: Well, that's exactly what we were talking about. And so the answer is right now we're working on the tiers, because we don't have agreement that they are the same. So to get off of the tier idea, we need a showing on somebody's part that they are the same.

MR. JONES: Okay.

MR. GRANIERE: We just can't just say, poof, they are, or, poof, they aren't. So it's better to work along the

lines and say they aren't the same, and that the size of the system does matter, and then create that as, I guess -- what's that legal word? Would that be a rebuttable presumption type deal? And then let someone else come in and say, no, this is why it's not the case.

It doesn't mean that we're not going to do it. It just means that -- so it's -- it's not a deal breaker. That means you come in and say we're not going to get standardization. The difference will be, will there will be three different standardizations based on the size of the system, or will there be only one standardization because the size of the system doesn't matter, but in the end we will have some standardization that we don't have now.

Now we have standardization for 10 kW. At the end of this we'd have standardization for three -- right now three levels or about. They might not all be the same, but there would be three as opposed to the alternative of only one all the way up to a megawatt. But there's still more standardization now than there was before. And the answer is to get more standardization. Now, I know what you would like, but that's not necessarily what we are going to get. Okay.

MR. WALLACE: All right. Bob, Wayne Wallace. I have a question on the -- I'm really uneducated on this standby electricity, so I don't really even understand that. When you -- when you say which energy providers, I mean, is this

something that -- like large, oh, I don't know, waste burners or something that --

MR. GRANIERE: No. Basically -- you know, I can understand why you don't have an understanding of it. This is one of those things that rate people do and people who worry about and people who design really big systems worry about. But my understanding of it is -- now, is that the way the standby works is that, basically, a consumer who chooses on-site generation buys an option to be served if, for some reason, their generation goes off line, because the alternative of not buying that option would be that if you go off line, too bad for you. And that's what it boils down to. And that's what it boils down to.

So it says -- and a customer could do that if they wanted to. I mean, there's no reason why you have to buy standby service. You could just say I don't want to buy standby service. I mean, conceivably somebody could say that. And then if their system breaks down, they just don't have any electricity. And right then it's too bad for them. So, basically, you're buying an option. And they're planning for the option -- and they're planning for the option that you buy. But if no one bought that option, then they wouldn't plan for it, and that would be that. But then when your system went down, you'd be without electricity.

MS. CLARK: Bob, this is Susan Clark.

I think as pointed out by Bill Ashburn today, that if you have generating for other than just emergency purposes, you would be eligible for the standby service. If you supply more than 20 percent, you would be required to be on standby service.

MR. GRANIERE: Yeah. Right. Yeah, I know. And, you know, those were some of the things, and I don't see anything that's wrong with that. It's just part of, you know, to further on. But that's -- all of those things are further on because the standby service is out there if someone didn't have it. And if no one had it, that would just -- you know, it would just be you wouldn't get it. But you have to be self-sufficient.

MR. REEDY: Bob Reedy.

It's my understanding that the standby, when these rules were developed, really PV was not an option, a real option at all. And as a result, standby is a very -- I mean, self-generation, excuse me, is relatively -- in the past has been a relatively small percentage of customers. And when you have a small sample group, the structures of ratemaking -- you can see why I say it's my understanding, because then I'm covered, because I may not understand very much. But, anyway, the behavior of the sample of the rate class is such that it's hard to apply. So, basically, you come up with what amounts to a negotiated contract for service. And that means you sit down

and --

MR. GRANIERE: Sure.

MR. REEDY: -- talk it out. And it's usually a customer -- we're talking about a customer that's large, it's an industrial process. There's a lot of clout in the hands of that customer before they build their facility. You know, well, I won't build my plant unless you give me a good deal or some type of thing. So I think it really doesn't work well with the world we're talking about. We're talking about PV systems that at most will go on Big Box stores or those types of commercial installations. And the negotiated rate type of concept may not apply.

And I'm just suggesting that if we looked at those stores as they're looked at today when they don't have generation, then all the rules and the processes that are involved in ratemaking do work, and that's where my comment about how the demand charges take care of all this. Because the demand --

MS. CLARK: Bob --

MR. REEDY: -- the demand structure says, you know, you're no different if you're -- if you're off -- if you decide to shut down your business and go home for a siesta in the afternoon, it looks the same looking into the electrical system as if you turned on some PV during that part of the day and it's taken care of.

MS. CLARK: Bob, this is Susan. I have a question as to why we -- yesterday and today, why are we even discussing the standby service? To the extent how does it relate to the interconnection? I'm asking you how --

MR. GRANIERE: Okay.

MS. CLARK: -- you all see it relating.

MR. GRANIERE: Well, the reason normally is that the standby service is normally part of the interconnection efforts, because you generally do the standby negotiations at the same time you're doing your interconnection. So you do both of them together.

MS. CLARK: Okay. So you see it as part of the interconnection agreement?

MR. GRANIERE: The interconnection standard, you know. And that's how it was described by what's his name, Mr. Ashburn. And --

MS. CLARK: Who?

MR. GRANIERE: The guy from TECO.

MS. CLARK: Okay.

MR. GRANIERE: And, you know, it was basically described that way, that they sit down and they -- and it's -- and the standby charge is determined through contract and negotiated on a case-by-case basis. So it's not really a standby rate that applies to everybody. So you would say that both of those things happen at the same time.

And I think really what Mr. Reedy is saying is that in his -- what I'm hearing him saying is that he really doesn't see a need for a -- for a standby charge for PVs, because -- I don't think it has much to do with the fact that it is stable or anything, it's just that they're so small they don't matter. And I don't know if that's true or not. But that's what I'm hearing, that they are just small enough that they don't matter.

And so -- but then, of course, that wouldn't be the case if the -- you know, if the PV was a megawatt, then they would matter. And so it would be a different situation then. So I guess, once again, we're down to the -- the idea of how big is it. But it always seems to come back to that, how big is it?

MR. REEDY: How big it is -- excuse me, Bob Reedy -- with respect to the load, I think is still a relevant question.

MR. GRANIERE: Yeah, that's what I'm saying, how big it is with respect to the load.

MR. REEDY: It's not an absolute number.

MR. GRANIERE: Yeah. And that's what I think. You know, it keeps coming down to that. And --

MR. REEDY: And I just -- I just believe that the current self-generation, even the largest utility, maybe we could get an idea from them, but even the largest utilities probably only have, you know, a few of these types of

customers.

MR. GRANIERE: Yeah. I mean, that's what I'm saying. I'm saying that what I'm hearing you say is that it's not a big enough or a widespread enough deal that you actually need a rate like this on the books, is what I'm hearing. But on the other side, there is the other side that says, but the person is buying an option from you, and you do have to serve them, and you do have the requirement to serve them. And so if you want that protection, then you should be willing to pay some price for that protection and that option.

So there are two sides to the argument. One says that it's a de minimus problem, and it really doesn't affect anything, so why go through the work of getting it. And the other side says, yeah, but you are buying an option, and you are getting the protection and everything else, because -- and, basically, someone else is bearing all of the risk that they have, even if it is a small de minimus risk. So that becomes a judgment call, and it really doesn't say who is right or wrong. It's just a plain old judgment call at -- you know, at some time. And right now the judgment here is that if you buy an option, you should pay for it.

MR. REEDY: And my question would be if -- excuse me, Bob Reedy. I'll pose it in specific terms. If I'm a Big Box store, and I apply for service. And not saying I may have emergency generation, we all understand how that fits into the

picture. That's disconnected when the grid goes down. But I apply for service, and I'm going to be a 500 kW peak demand.

MR. GRANIERE: Uh-huh.

MR. REEDY: If I install 100 kW of PV on my roof.

MR. GRANIERE: Right.

MR. REEDY: My question would be how is it different in the ratemaking process? This is not a standby customer. They have some self-generation, partial self-generation, but how is it different and could it be distinguished in the rate process than if I just chose between the hours of 11:00 a.m. and, say, 6:00 p.m. to turn off 100 kW of my discretionary loads, maybe I have chiller -- freezers or some type of chilling, or I would change my air conditioning profile. And I do this actively today to lower my demand charge. How is that different from turning on some PV to meet that demand and allow me to continue to run those services? My belief is that today utilities are ambivalent to that. It's built into the rate through the demand structure.

MR. GRANIERE: I think what -- I think that -- from what I'm hearing you saying it's not the thing that we're talking about. You're saying that you have a 500 kW load, the other guy is only giving you 400 of it, and you're going to supply the 100 of it.

MR. REEDY: No, sir.

MR. GRANIERE: Right. And then here's my question,

and I think this is the question that we come down to. Let's say you don't supply the 100 of it. Do you want them to supply that 100, or are you willing to do voluntary load management? And if you're willing to do voluntary load management, let's say are you willing, if you do voluntary load management, to the fact that you don't actually do it, for whatever reason, would you be mad if I came there and said you owe me a million dollars because you didn't do what you said you were going to do.

MR. REEDY: No, sir. That's not really the question I'm posing.

I'm posing a very specific question. I have a 500 kW service, so my demand could be up to 500 kW. I can operate -- in fact, let's go ahead and let me go in service, and I operate for two years. And during those two years, in order to avoid demand charges or minimize my demand charges on peak, I activate my own internal controls, like Disney does and many other stores, Wal-Mart, and I minimize my demand.

MR. GRANIERE: Sure.

MR. REEDY: Now, after two years I decide to put a 100 kW PV system on my roof.

MR. GRANIERE: Okay.

MR. REEDY: Big roof.

MR. GRANIERE: Okay.

MR. REEDY: And because of that 100 kW system, I made

that investment, I say, you know what, now I can run these store displays during the middle of the day or I can run -- I can change my process, I can open another line of --

MR. GRANIERE: Sure. Okay.

MR. REEDY: So I do that. Nothing has changed in terms of my demands of the utility. The understanding with the utility, the planning process, I'm just running my internal process differently. If the system shuts down for some reason, or it's a cloudy, rainy, or it's a really cloudy day or something, then the demand goes to 500 kW, it behaves the same as if my load -- internal load management controls, which last year, oops, we screwed up, and we ran up to 500 kW. So I'm submitting here that without you looking at my store, you cannot tell me whether I had PV there or not, all you can see is that my demand went up.

MR. GRANIERE: No, I think I could. Because, basically, what you're saying is that you're saying you could incur a demand charge of 500 times whatever the kW demand charge is, and that's what you would have been paying each month, but you've decided not to do that. Instead, you've decided to only do 400 each month. So if I looked at your bill, I'd say you're a 400 kW customer. And then you come along and say, oh, poof, I have another 100 kW, so now I'm a 500 kW customer. But as far as I'm concerned, you're still a 400 kW customer. And then if you knock off, then you're still

a 400 kW customer, because that's what I planned you for --

MS. CLARK: Bob --

MR. GRANIERE: -- a 400 kW customer.

MS. CLARK: This is Susan Clark.

I guess I'm still trying -- I though what we were concentrating on is --

MR. GRANIERE: Well, basically, what we're getting to is the fact that he's -- that the argument -- that the discussion here is, is a standby charge necessary for PVs and small renewables, is what we're getting to.

MS. CLARK: Well, I know that was on your list of issues to be discussed at later workshops when you had the initial workshop --

(Tape change.)

MR. GRANIERE: But --

MS. CLARK: As I understand it, what rate you're on or the issue of the standby rate is not part of an interconnection agreement. It is a consideration that the customer would look at in terms of deciding what rate to be on, and at least if they're generating more than 20 percent, they'd have to be on the rate. But I thought our focus was more on the interconnection itself.

MR. GRANIERE: Well, I would think -- you know, I have to respectfully disagree on this one, because I kind of think that the interconnection agreement is a contract and part

of -- from what I'm hearing, part of that contract is the standby charge. And if that's the case, then -- but if that's not the case, then we don't have to worry about it.

MS. CLARK: That's not the case.

SPEAKER: (Inaudible.)

MS. CLARK: Not a part of the interconnection agreement.

SPEAKER: (Inaudible.)

MR. GRANIERE: Okay.

SPEAKER: (Inaudible.)

MR. GRANIERE: Okay.

MR. REEDY: Bob Reedy. I would point out, though, that standby charges are a major factor in deciding whether or not to interconnect and whether or not to even build a system, a PV system. So it may be in a technical -- I mean, in a legalistic sense they can be separated, but in a practical sense of whether it makes a good business decision to install PV systems, if you are a commercial customer, standby charges are a significant thing. And, thus, my somewhat dogged determination to cast what I believe is a rather more common scenario than the reciprocating engine, steam cycle industrial types of scenarios, negotiated rate scenarios.

In order to have development of a common standard going onto commercial stores where everything is very traditional and well-behaved, we've got to have an

understanding on standby rates, as well. So I just believe that they cannot be separated. And I also believe that they cannot be identified, because even if I manage my -- in my hypothetical there, if I manage my load to 400 kW, my deal with the utility in signing up is it's a 500 kW service. And they are certainly prepared through their rates to serve that. And typically if my load management program is internal, I often -- you know, stores will screw up and get hit with high demands. So there's plenty of notice that that is potentially possible and it should be recovered through the demand charges.

MR. GRANIERE: Well, the only thing -- well, one of the things I did learn is that standby rates will be a contentious issue. Okay. So we've learned that. And now -- and we need to decide how contentious that will be in the part of getting more renewables on the ground and, hopefully, it won't be a deal breaker on the smaller stuff, which is where we're looking for the standardization, and where we're looking for the net metering, that it doesn't become a deal breaker on those types of things.

But, you know -- but it's nice to know where the deal breakers are, and so I guess we've found one. And now we just need to do, what we are going to do about it. But it seems like we've found one. And, of course, when you can't -- when something like this happens, I guess somebody else will decide the issue, and that will be that.

SPEAKER: (Inaudible.)

MR. GRANIERE: All right. There is no such thing as a deal breaker, except -- unless you are two private companies, of course, which you're not. So that takes care of that.

MR. HARRIS: Bob, Larry Harris. One of the things I'm hearing, though, is this sounds like it is a much bigger issue, not just for the PVs, but for everyone else. I see Michelle in the back of the room. She's probably listening and thinking, you know, rate structure, wait a second. They've got jurisdiction over munies and co-ops, and rate structure arguably. So what I'm thinking is, hearing this conversation, it strikes me as this is almost a third staff informational workshop on a third track where you would have not only the IOUs and the PVs in, but I would guess the munies and co-ops would be interested, very interested. I would suspect that you would have the other renewable generators very interested.

The challenge is keeping them from hijacking it. And you have, you know, IMC coming in and saying, we've got, you know, 250 megawatts of standby, and we want to hijack this entire proceeding and talk about reforming our 250 megawatts versus, you know, somebody coming and talking about, you know, these small one megawatts. But that's what I'm hearing, and I don't think anybody -- I know I'm certainly not competent to talk about these rate structure issues. And I think we have specialized staff who just do that.

MR. GRANIERE: Sure.

MR. HARRIS: I'm sure the utilities have specialized people and the munies and co-ops have specialized people. And I would guess some of the bigger renewable companies probably even have people who -- you know, the waste burners and the, whatever they call themselves, municipal solid waste, probably have specialized standby people, and they probably can provide a pretty good background and really fill the universe of what are the issues, what are the policy decisions that have to be made.

And listening to what I heard from this side of the table earlier, you know, they were discussing what can the state of Florida do to move forward and show that we are interested in, you know, photovoltaic or interested in renewables. This sounds like the kind of thing that is a very, very large elephant in the room. But it also has some potential for the Commission to really start staking out some policy declarations. I like what you said, which is that we don't want it to be a deal breaker for net metering or interconnection agreements.

MR. GRANIERE: Yes. Basically, the streamlined interconnections and the net metering, I certainly would hope that this would not be a deal breaker on those, because it doesn't seem to be -- I just hope it won't. I mean -- but I, you know, would think that, you know, if there's a policy on

this issue, then the resolution will be found somehow. You know, that's what we know about, you know, private negotiations versus these public/private type deals, you know. Private ones, they do have disagreement points and people walk away from them. On these public/private ones, there is no such thing as a disagreement point. All there is is a point that doesn't require a third party to make a decision. That's what it boils down to.

In this kind of environment, and you know as well as anybody does, that if there is a disagreement point between two parties, then there's a third party who steps in and makes the decision. Or nothing happens. I don't know. One of those two things happen.

So I guess we can't go any farther on this. We've sort of exhausted it for now, and that's about it. But I think you're right, we need to get up to the standby rate and start that as a bigger thing. And I think as, you know, as we said earlier, that, you know, the other people didn't come. And they probably didn't come because they didn't think they had a dog in this fight. But now we've found out that probably on the standby rates they do. And so those who --

MR. REEDY: Small commercial and -- Bob Reedy -- small commercial and residential is 99 percent of what certainly at FSEC we're concerned about --

MR. GRANIERE: No, I know. We understand that. I

mean -- I mean, we understand that we're talking about --

MR. REEDY: Those are all below the -- they're not even eligible for standby service, and so --

MR. GRANIERE: And so if they are not eligible for standby service, then we're really wasting our time.

MR. REEDY: Yes, sir.

MR. GRANIERE: I mean, so then -- so I guess then we have -- it's gone as far as it's going right now. There's nothing else left to say.

As for the next area, which is technological issues, I think we talked about this, why our technology restrictions are important. And we finally found out that probably they are not that important. What's more important are the interconnection characteristics. And I think that's what we learned today.

Why is it important for safety requirements to be included in the interconnection, regardless of whether the renewable energy provider is eligible for standardized streamlined interconnection. I think we figured that out, too. It has to do with that qualified inverter. And once we learn about that, then we'll know about why they're important and why they're not.

How does the interconnection of the renewable energy provider differ from the interconnection of the non-renewable energy provider? Well, basically, what we're working on here

right now is generally most of these guys are on the customer side rather than on the transmission side. And so they're not really IPPs, although they may be some day. But right now they don't look like they're IPPs, except for those municipal solid waste guys who are IPPs. So, you know, we have -- but nobody here at this table is in that business, so they have to show up at a different time to talk about their stuff.

And then we come down -- and I don't think anybody is thinking about an IPP, someone with like 100 megawatts of power asking for net metering. Somehow I just don't think that that's going to happen. And so I don't think that that's an issue, either.

So then we get down to the financial and rate-related issues, which are what factors that should be considered when developing an interconnection charge? Well, we already know the factors that are considered on this, at least for the 10 kW stuff. And I'm sure there's other factors that are shown in the interconnection charge for people that are bigger than that, and that's where we need to find out some more information. Because if we're going to streamline to a higher level than 10 kW, we need to know what we can do to set tariffs or charges like that, much along the same way that we do a 10 kW type deal, which we don't have right now. Okay. So that's an area we need to think about and talk about.

And I think right now that the people who can speak

to these issues are the IOUs, more than any of the solar people here. So what I'm going to just ask is that if you all can think about what we need to do to boost these numbers up. And I think by the time we leave here today, we just need to set tentative breaks just so we sort of get some idea so we have some framework of which to talk about these issues in.

Not that they're meaningful in the sense that these are where the breaks will be, but just something to say instead of saying the breaks are X, Y and Z, we'll just give numbers to those X, Y and Z, so we just get an idea as for what we look at or have to look at differently to do that type of stuff. But, of course, I mean, this is a workshop, so anybody who wants to talk about these things right now is, you know, more than free to do that, but I think it's pretty much the IOUs that would have to do the talking on this one.

Okay. Moving along. What are the factors that should be considered when developing a charge for standby power. We've already figured out what that is. That's another workshop. So off we go.

What are the additional costs that the host utilities incur when they interconnect customer -- when they interconnect customer-side renewable energy? And, actually, I didn't hear too much at all about additional costs. But that would be nice to know. You know, what are the actual additional costs that a utility incurs when it does interconnect customer-side or

on-site generation?

MS. CLARK: Generally, it would be metering, meter reading and billing costs. And, also, depending on the interconnection installed, there might be operation and maintenance expenses for ongoing maintenance and future replacement of facilities.

MR. GRANIERE: Okay.

MS. CLARK: And then under your current rule, that's billed to the customer.

MR. GRANIERE: Okay. And that's currently billed to the customer. Okay.

Aha, we got to the cross-subsidization issues, and I'm just going to pass over that one right now. Okay. You know, if that's all right with you. And I'm actually working on a little bit of a schematic thing that, you know, tries just to give an alternative view of what this subsidization is or isn't. And I'll be glad, once I finish it, I'll put it in the record and share it with everybody. Okay? You know, it just -- and I'll tell you up front what I'm trying to do. What I'm trying to do is follow the dollars, okay? And see what happens as we follow the dollars. And then finally get to the point to see what's happening. And, hopefully -- and I'll even tell you what I'm planning on doing. I'm planning on starting with a two-person system, then I'll increase it to a three-person system, and then I'll increase it maybe to a four

or five to see if anything changes as I add one. But what I suspect is that once I get from two to three, I'll have everything I need to know, you know, in the schematic. And then the rest becomes just a whole bunch of people. But other than that, I think I've captured everything from going from two to three. That's my gut feeling. But I'll work it out and see what happens.

MS. CLARK: We would appreciate the opportunity to look at it and --

MR. GRANIERE: Oh, of course. Absolutely. You know, I'll work it out and share it with everybody, and then they can tell me where I, you know, went wrong. Okay?

And then we have how important is the revenue effect. Well, you know, we have sort of hinted around on this, and the only thing that I could think of right now is Judy and I -- who is not here. That's okay.

SPEAKER: Dentist appointment.

MR. GRANIERE: That's right, dentist appointment. She told me about that.

There was somewhere in the past that we heard we had something like 46 new systems tacked on since the new rule, but we didn't know how many systems that were there before the new rule. So let's say that there was 200 systems tacked on at 10 kW a system, something like that. I'm pretty sure that when we -- when we start to roll that all into a ratemaking exercise

that's done over the entire utility, that we're talking about something that's going to change the rate from maybe out there in the fourth or fifth decimal place. So what I'm really saying is that it's not a big deal from -- that's my gut feeling. But, you know, I'll be glad to read anybody or, you know, anything that says it is a big deal. Okay?

MS. CLARK: Bob --

MR. GRANIERE: But my gut feeling is that it isn't.

MS. CLARK: This is Susan Clark.

I think I was looking for a little more explanation of what revenue effect you were talking about. Are you talking about the cost of streamlining the process or the potential cost or revenue impact of more renewable resources coming on the system?

MR. GRANIERE: Well, what I'm saying is that I think both of those things will be actually like in the grand scheme of things not a really big revenue issue. I think that the net metering won't be a big revenue issue, and I also think that the streamlining being restricted to, you know, not the entire world or anything like that, but something that's manageable, that the additional revenues that are incurred to do the streamlining will be more than recovered on the back end by not having to spend so much time doing these things in the future.

And as for what will be the treatment of the additional costs that are uncovered -- you know, incurred to

get the streamlining done up front, you know, that's beyond me. I don't know what they do with that. You know, maybe there's a clause somewhere. I don't know. But I just don't know what's going to happen to that.

But what my expectation is and what is always the expectation of streamlining is that once you do the work to get it streamlined, on the back end there's more than enough cost recovery that you really don't need a revenue requirement treatment on it. But, anyway. But I'm not going to get there. That's not what I do. But that's just my thinking. And the thinking generally is that streamlining makes things easier, less costly and speedier. I won't say more efficient, because I hate that word. So we use speedier, easier, and less costly.

So, that's the last question. So it's 2:30, everybody is happy. And so I sort of made a closing statement.

I just want to thank everybody here who came and provided their expertise and input and listened, even if they didn't talk, but listened.

And I want to thank you, Tom, for the work that you did.

I want to thank everybody here for coming and talking and sharing their stuff. I think it was really useful.

I want to thank you, Bob. Your presentation was really good. It helped me understand what was going on. I would appreciate if you would give us a copy so we could

include it in the record.

I want to thank, of course, Larry for all the legal stuff. He did what he had to do, but he really did it good. So I'm so happy about that.

MR. HARRIS: It's tough.

MR. GRANIERE: I know it's tough work. You know, sometimes, you know -- you know, sometimes that full day is a real bummer, you know. And so, you know -- and so we'll get to that.

And everybody else, thank you so much. And I hope you have a safe trip home.

MS. CLARK: Thanks, Bob.

SPEAKER: Bob, can you just explain real quick what the next steps will be, and if there will be any future opportunities for participation, how we stay in touch and that sort of thing?

MR. GRANIERE: Okay. Yes, there will be future opportunities for participation. Anything that you'd like to supply to us in written format, please do. We'll include it in the record. If you want to call us up and talk to us about anything, please do. We'll do that. And we will notice when the next meetings are held to deal with these issues. Okay. But there will be future meetings.

SPEAKER: (Inaudible) sign-in list.

MR. GRANIERE: Yeah, you're on the sign-in list, so

you will get everything.

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STATE OF FLORIDA)

: CERTIFICATE OF REPORTER

COUNTY OF LEON)

I, JANE FAUROT, RPR, Chief, Hearing Reporter Services, FPSC Commission Clerk, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I transcribed the proceedings from cassette tape, and that this transcript constitutes a true transcription of my said cassette tapes.

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

DATED THIS 21st day of May, 2007.

JANE FAUROT, RPR
Official FPSC Hearings Reporter
FPSC Commission Clerk
(850) 413-6732