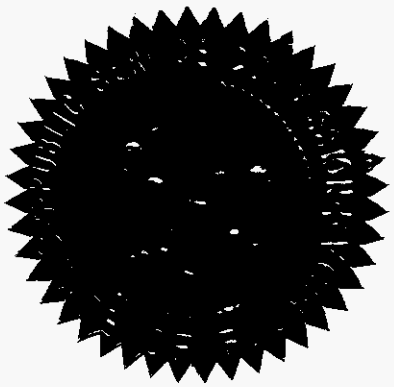
BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

DOCKET NO. 090451-EM

JOINT PETITION TO DETERMINE NEED FOR GAINESVILLE RENEWABLE ENERGY CENTER IN ALACHUA COUNTY, BY GAINESVILLE REGIONAL UTILITIES AND GAINESVILLE RENEWABLE ENERGY CENTER, LLC.

_____/



VOLUME 2

Pages 188 through 315

ELECTRONIC VERSIONS OF THIS TRANSCRIPT ARE A CONVENIENCE COPY ONLY AND ARE NOT THE OFFICIAL TRANSCRIPT OF THE HEARING, THE .PDF VERSION INCLUDES PREFILED TESTIMONY.

PROCEEDINGS:	HEARING
COMMISSIONERS PARTICIPATING:	COMMISSIONER LISA POLAK EDGAR COMMISSIONER NANCY ARGENZIANO COMMISSIONER NATHAN A. SKOP COMMISSIONER DAVID E. KLEMENT
DATE:	Wednesday, December 16, 2009
TIME:	Commenced at 9:30 a.m. Concluded at 4:23 p.m.
REPORTED BY:	JANE FAUROT, RPR LINDA BOLES, RPR, CRR Official FPSC Reporters
APPEARANCES:	(As heretofore noted.)

I N D E X

WITNESSES

NAME:	PAGE NO.
EDWARD G. REGAN	
Redirect Examination by Mr. Wright	192
TODD KAMHOOT	
Prefiled Direct Testimony Inserted	216
RICHARD D. BACHMEIER	
Direct Examination by Mr. Wright	222
Prefiled Testimony Inserted	225
Cross Examination by Ms. Brown	235
JOSHUA H. LEVINE	
Direct Examination by Mr. Wright	237
Prefiled Testimony Inserted	243
Cross Examination by Ms. Brown	261
Redirect Examination by Mr. Wright	280
BRADLEY KUSHNER	
Direct Examination by Ms. Wright	284
Prefiled Testimony Inserted	280
Cross Examination by Mr. Sayler	308

EXHIBITS

NUMBER:			ID.	ADMTD.
31				214
8				214
9				214
10				214
11	TK-1			215
12	TK-2			215
13	RDB-1		224	237
14	RDB-2		224	237
15	RDB-3		224	237
16	JHL-1		239	283
17-22				311
27		Composite Errata Exhibit	312	312
32		Errata to 27 and 28	313	313

P R O C E E D I N G S

COMMISSIONER EDGAR: We will get started. We are back on the record after lunch break. I hope you all enjoyed that little additional excitement that we had with the fire drill at the lunch break.

Mr. Wright, I think that when we broke you had said that you had copies of the information that was going to be a late-filed exhibit, is that correct?

MR. WRIGHT: Yes, Madam Chairman.

COMMISSIONER EDGAR: Do you want to go ahead and distribute?

MR. WRIGHT: Yes, thank you.

COMMISSIONER EDGAR: Okay. And, Commissioner Skop, this, of course, was at your initial request. So if you can take a look and before we consider entering, let us know if it meets what your expectation was. And then also if you have questions on it for this witness, let's try to do that before we go to redirect.

COMMISSIONER SKOP: Thank you, Madam Chair. I think that the graph on the last page of what has been marked as Exhibit Number 31 reflects the graphical representation of the average consumption, so I think that is adequate to show the potential monthly rate impact to GRU customers under each the four scenarios, so I'm fine with that. Thank you.

COMMISSIONER EDGAR: Thank you, Mr. Wright, for the timeliness with that. We will take it up after you are finished, as we normally do with exhibits. And if you are ready for redirect, I think that is where we are in the proceeding.

MR. WRIGHT: Thank you, Madam Chairman.

REDIRECT EXAMINATION

BY MR. WRIGHT:

Q. Just one quick question on what has now been marked as Exhibit 31. If you would, look at -- this is just a clarification to an answer I think you gave earlier, Mr. Regan. What is the numeric value for the regulated CO2 with resale case in the year 2014?

A. Are you referring to Exhibit 31?

Q. Yes, sir.

A. In 2014, the dollars per 831-kilowatt hours is $4.13.

Q. Thank you. You were asked a few questions during the course of your cross-examination about organizations that have evaluated biomass energy with respect to whether it is renewable and sustainable.

Could you identify such organizations, if any?

A. Yes, I can. Let me find the page here.

Q. Thank you.

A. The U.S. Climate Registry, the U.S.

Environmental Protection Agency, the Regional Greenhouse Gas Initiative, which is the coverage rating market up in the northeast of America, the International Panel on Climate Change, IPCC, and the United Nations Framework Convention on Climate Change.

Q. Thank you. You were asked some questions about -- you actually were asked a number of questions about potential wholesale sales of part of the GREC project's output to other utilities. Can you tell the Commission which utilities you are aware of that are interested or that have expressed interest in negotiating toward a PPA for part or up to half of the capacity from the GREC project?

A. The four utilities that have gone to the point of entering into confidentiality agreements and meeting with us to discuss the project in detail include FMPA, Orlando Utilities Commission, Reedy Creek, and Lakeland, City of Lakeland.

Q. Thank you. In your experience or opinion, why are these utilities interested in purchasing part of the output from the GREC project?

A. What I'm hearing is that there is a demand for this kind of energy in their customer base. Some of these utilities have painfully experienced how much solar costs, and they see this as a pretty convenient

way to get access to green power that they might want to remarket to their customers and/or as a hedge for regulatory purposes.

Q. In response to a question, I believe, from Commissioner Skop, you were discussing the construction cost adjustor.

A. Uh-huh; yes.

Q. I thought that I heard you say that the construction cost adjustor escalation factor was fixed at 2.5 percent. Is that accurate?

A. No, that's not accurate, and if I said that it was misspoken.

Q. What did you intend to convey about the construction cost adjustor and the value of 2.5 percent that was referenced in your response?

A. It's a basket index. And currently the index has been going down and bouncing up. It's hovering right around one or less than one.

Q. When you say one, meaning an index value of like 100?

A. Yes. At the value of one the prices are exactly as in the PPA.

Q. So what was the 2.5 percent?

A. I don't remember.

Q. I just want to clarify a couple of things

about some questions that Commissioner Skop asked you about what I believe is Exhibit 29, which is the PowerPoint presentation. You had some discussion with Commissioner Skop about Pages 20 and 21 of that exhibit?

A. Yes, we did.

Q. Can you just summarize for the Commission what happens to the purchases from Progress Energy Florida as we go forward in time and in what years?

A. There are actually two separate contracts that sum up to 100. The first contract expires at the end of 2011 and the other contract expires at the end of 2013.

Q. Thank you. Also in the context of those tables, you had some discussion with Commissioner Skop about reserving margins, and I just have a couple of questions for you about that. Is GRU's system more reliable with a 22 percent reserve margin than with a 15 percent reserve margin?

A. A little bit more reliable.

Q. Is it correspondingly perhaps a little bit more reliable if the reserve margin is 30 percent or so?

A. Yes, it would be.

Q. I noted from the numeric data that is presented in the corner of both Pages 20 and 21 -- there's a little corner table in the upper right of the graphic -- that the Deer Haven 2 coal-fired unit

represents about 228 megawatts of Gainesville's total capacity. Is that accurate?

A. That is accurate.

Q. My question for you is does the fact that that unit represents a relatively high percentage of Gainesville's total generating capacity influence reliability considerations for GRU?

A. It absolutely does.

Q. Could you explain how, please?

A. Well, if the probability was uniform across all units, it's obvious that if a big one goes out it has a bigger effect than a little one. And the probabilities are not uniform, but the size overweighs the differences in the forced outrage rates of the units. And so when it goes out, it has a very marked effect on our production costs, and we have to go to market to replace the power.

Q. In responding to some question by Commission Skop about EFOR, I just have two clarifying questions, what does EFOR stand for, please?

A. Was it EOFR?

Q. EFOR, I believe.

A. Equivalent Forced Outage Rate.

Q. Thank you. And I believe you referred to either a database or a document, and I think you said

GADS data.

A. Yes.

Q. Could you please tell the Commission what that is?

A. Generation Data System. I forget what the A is for. It's a national level database that we give our information to and it allows utilities to look at reliability indices across the industry for various types of units and so on. Oh, Generation Availability Data System.

Q. And I believe you made a remark -- I'm not sure I caught your complete comment, but I believe you made a remark about the GADS data for similar units, i.e., similar to Deer Haven 2, showing something with respect to the reliability of those units as a population. Could you summarize what you meant to convey there?

A. That on statistical average you have a lot of operating -- well, on the average, the reliability will decline through time. You can slow it down by replacing problems and anticipating maintenance, but over time it's just like an old car. Eventually something -- you know, all the pieces parts are old, they are all subject to stress, and rust, and all of that kind of stuff.

Q. You were asked some questions about GRU's DSM or energy conservation programs. I just have a simple clarifying question for you. Are GRU's projections of future energy conservation achievements through those programs incorporated into your load projections?

A. Yes, they are.

Q. As we discussed earlier, and I should have asked this then, but this is where it is on my list. You were asked some questions regarding potential power purchase agreements or power sales agreements with offtakers, and you agreed that you don't have any power purchase agreements in place yet, correct?

A. That is correct.

Q. Is that unusual considering where the GREC project is in its process?

A. I don't think so. Usually you need to have a firm project because once people sign a PPA, it's a commitment to that unit which affects their long-term supply planning, and at this phase GREC does not have the permits that it would need for them to change their planning accordingly.

Q. So in the normal course of events, when would you expect to be engaged in more serious negotiations toward a real power sales agreement?

A. After the need determination is decided and

upon receipt of the site certification, which deals with the environmental permits and all the air permits and different permits that go with that.

Q. Commissioner Klement asked you a question essentially, as I recall it, asking you to comment on the cleanliness or the clean burning characteristics of the Gainesville Renewable Energy Center. Could you please -- and I think you answered in terms of CO2. Could you talk about the cleanliness relative to other emissions as well as carbon?

A. Sure. The fuel that's going to be used is low in mercury so it is not going to have mercury. The facility is equipped with a -- will be equipped with a selective catalytic reduction unit which will reduce NOx. There will be a baghouse to control particulate emissions, and there will be some additives to deal with some of the volatiles (phonetic), some of the acids that occur. Overall this is a very clean facility largely because of the quality of the fuel going in. Which, by the way, does not include construction and demolition debris.

Q. I'm sorry, would you repeat the last statement. I'm not sure I caught every word of it.

A. Which does not include construction and demolition debris. That was something allowed in the

PPA, but American -- I mean, yes, GREC, LLC decided to commit to not use that source of fuel in their site certification application, which I believe went in November 30th. And the reason for that was exactly the reasons that we heard earlier today about the possibility for contaminants to get into that particular fuel train and the difficulty in managing that, and so they decided just to take it off the table.

Q. So do I understand that comment to indicate that as a matter of the facility's permit, it would not be allowed to burn C&D debris?

A. That's right.

Q. Thank you. Commissioner Skop asked you a couple of questions about potentially stranded investment relative to GRU's intermediate and peaking capacity. Would GRU's intermediate and peaking units be stranded investment as you understand that term when the GREC comes on-line?

A. As I understand that term, to the extent there will be no debt service payments outgoing for those units because they are pretty much depreciated -- or actually not depreciated, but the debt has been paid off. All four, perhaps, combined cycle one, Kelly combined cycle one, so there is actually very little debt outstanding on those units.

Q. I believe in response to a question from Commissioner Argenziano regarding your search for more cost-effective renewable energy you said something to the effect of GRU beat the bushes to search for other renewables, and then you talked about the -- I think that you indicated that the technology to be used in the GREC project is presently used throughout the world. Is that accurate so far?

A. That is accurate.

Q. In your experience as a professional engineer, would you consider the technology of this facility to be experimental?

A. Not at all.

Q. Commissioner Skop asked you some questions about risk associated with bringing the facility on-line in 2013. Let me ask you this question. Is there a risk that the market price of -- that GRU could obtain to sell capacity and energy from the GREC would be less than the full cost including all the capital costs as well as the operating costs?

A. You mean in terms of the resale option that we have been discussing?

Q. Correct, that is the context in which I meant my question.

A. There is a risk that we would not get all of

our costs recovered.

Q. To what extent, if at all, is that risk offset by other risk reduction benefits available from the project in the contract?

A. The risk reduction benefits relate to construction cost overruns, the renewable replacement risk, the financing risk. Those are all very large numbers that I would believe would pale in consideration. I will say that the pricing we are seeing on this in discussing it with people who have signed the confidentiality agreement is pretty much recognized that if you want a reliable plant this is what they go for these days. It's certainly cheaper than nuclear.

Q. Do any of those utilities with whom you have had these preliminary conversations and have confidentiality agreements, do any of those have capacity needs before, say, 2020?

A. One of them absolutely did.

Q. Thank you. The last couple of questions I have relate to some questions that you were asked regarding the fact that GRU and GREC, in fact, does not presently have long-term fuel contracts. Now, you all own and operate power plants, correct?

A. Yes, we do.

Q. Is it unusual at this point in the permitting process for a utility or a developer/operator of a power plant not to have long-term fuel contracts at this point in the process?

A. I don't think it's unusual. I think that the supply availability would have had to have been determined, and I feel like we have gone through that exercise.

Q. For example, if you were building additional or proposing to build additional coal capacity with an in-service date in 2013, when would you expect to execute fuel contracts for the fuel for such a plant?

A. Certainly not before the permits were received.

Q. And in that context by permits do you mean the site certification?

A. Site certification and need permits.

Q. You mentioned in response to the same line of questioning something about the financing markets, and I think I have a simple question for you, and it is this: To the best of your knowledge and based on your experience, do you believe that GREC, the company, that the GREC project could be financed without fuel contracts?

A. I believe it could not.

MR. WRIGHT: Thank you. And that does conclude my redirect, Madam Chairman. I appreciate the opportunity.

COMMISSIONER EDGAR: Commissioner Skop.

COMMISSIONER SKOP: Madam Chair, I have some follow-up questions, and I ask that Mr. Wright be allowed to redirect, if necessary.

But, Mr. Regan, with respect to Deer Haven 2, and going back to that unit, I think you previously testified that unit had a 50-year service life which we are nowhere near the end of that yet, is that correct?

THE WITNESS: That is correct.

COMMISSIONER SKOP: Okay. And that unit is approximately 225 megawatts, is that correct?

THE WITNESS: Approximately. That would be the summer net rating.

COMMISSIONER SKOP: Okay. Can I ask you briefly to look at the yellow sheet again, the yellow exhibit?

THE WITNESS: Is that the one with the pie charts?

COMMISSIONER SKOP: No, it's Page 5 of 8 on the yellow sheet handout.

THE WITNESS: I believe it had the capacity factor tables?

COMMISSIONER SKOP: Yes, sir.

THE WITNESS: Okay.

COMMISSIONER SKOP: Now, in relation to the Deer Haven Unit Number 2, which is the first row in each of the respective tables there, you would agree, would you not, that Deer Haven Unit 2, with the exception of the Southeast Energy Center, which just on-line, has the highest capacity factor irrespective of what scenario is considered there of any of GRU's generating units, is that correct?

THE WITNESS: That is correct.

COMMISSIONER SKOP: Now, with no new construction until 2023, as illustrated by the bottom chart, in fact, you are showing a capacity factor in the mid-80s, is that correct, for that unit?

THE WITNESS: Yes.

COMMISSIONER SKOP: Okay. And so that would signify that that unit provides -- is operating as a base load generating unit, is that correct, with that high level of capacity factor?

THE WITNESS: That would be correct.

COMMISSIONER SKOP: Okay. Do you foresee any reason why given the availability -- if availability of Deer Haven 2 was expected to decrease during the time frame in which this data on this chart is presented,

wouldn't you expect to see capacity factors go down significantly?

THE WITNESS: We don't have the capability of modeling degradation and forced outage rates in our production modeling software.

COMMISSIONER SKOP: Okay. Do you know -- with respect to the capacity factors for Deer Haven 2, do you know what the ten-year history for capacity factor has been for that unit?

THE WITNESS: For Deer Haven 2?

COMMISSIONER SKOP: Yes.

THE WITNESS: No, I don't have that offhand. I know that 2008 was a really bad year, but it has been -- we are trying get it from 80 to 85 percent.

COMMISSIONER SKOP: Okay. Do you have any reason to believe over the past ten years that the capacity factor for Deer Haven 2 would be anything different from the numbers shown on this page?

THE WITNESS: Yes, I do.

COMMISSIONER SKOP: With the exception of the one year?

THE WITNESS: No. We were really having chronic tube leak problems, and it was just getting worse and worse, and we have made some major investments into replacing the tubes and changing our O&M practices

on the tubes. Boiler tubes. Those are boiler tubes.

COMMISSIONER SKOP: Boiler tubes, okay. But those problems have been mitigated through O&M, is that correct, in the near term?

THE WITNESS: Time will tell. We haven't achieved that quite yet, but that is certainly what we are forecasting here.

COMMISSIONER SKOP: Okay. Moving briefly to the J. R. Kelly combined cycle unit. In the bottom chart that is shown as operating at a capacity factor of 22 percent roughly to 27 percent in that line. Do you see that in the bottom chart?

THE WITNESS: I do. I see that.

COMMISSIONER SKOP: Do you know why after 2023 those capacity factor numbers would go up significantly?

THE WITNESS: It is because of Deer Haven 1 falling out of the mix.

COMMISSIONER SKOP: Okay. So, getting back to the stranded investment, again, Mr. Wright asked you a question and you characterized it about the -- that the ratepayers are still paying for J.R. Kelly combined cycle unit. And I guess my view of stranded investment -- and I'll ask you to respond to it, but if I had a, you know, perfectly good vehicle that I used everyday to drive, and then bought a new vehicle, but

didn't use the new vehicle, again, I've got two of something and I am only using one. And on this J.R. Kelly combined cycle unit, it's operating at a fraction of what a combined cycle plant would normally do. So isn't, in a sense, it being underutilized and further underutilized by the addition of the new capacity?

I mean, if you look at the middle chart without resale, the J.R. Kelly unit has a capacity factor 3.7 percent in 2014 versus 22.4 percent with no new construction. So how is that asset that the ratepayers have already paid for, or currently pay for being used as opposed to just being set aside and idled? That is a gas-fired combined cycle, so it certainly is cleaner than coal.

THE WITNESS: Yes, it is. That particular unit is a retrofit of J.R. Kelly 8, so it doesn't have the kind of heat rates that you see with, you know, large F class. It's relatively small. And given the price of gas, that is where it falls out in the dispatch stack.

COMMISSIONER SKOP: Okay. And I understand the reason -- the reason to add, you know, the new biomass generation is mainly seems to be more of a hedge towards carbon costs and other things that haven't really kind of come into existence. But, again, it is

equally important to look at, you know, if the ratepayers have bought and paid for something that is perfectly capable of meeting their native generating requirements and that just gets displaced by new generation, you know, then that at least to me begs the question of cost-effectiveness because you are adding something to some degree that you might really not need where you have some generation -- I understand the benefits, but I'm also trying to get into the issue of, you know, aged assets, which I hear as a central theme, but a lot of these units appear to have a lot of useful life as indicated by, you know, the projection in the bottom table. But, you know, anything that they have is really kind of being cast aside by virtue of the new capacity addition, so I'm just trying to --

THE WITNESS: I'm trying to think of an analogy to help you.

COMMISSIONER SKOP: Okay. And let me qualify. At the end of the day the Commission --

THE WITNESS: And I am going to use an argument by extreme on purpose. If you have a boat that when you drive around the lake is putting oil in the water, it's a perfectly good boat, it goes around fine, but you just say, you know what, I don't want to put that much oil in the water. I'm going get me a

sailboat. That's what's going on here.

COMMISSIONER SKOP: And I understand that. But also equally there are costs of incurring the new sailboat over and above your existing boat.

THE WITNESS: And I do have to agree with you that I was thinking of stranded of assets in the framework of having been through a lot of conservation cost recovery dockets and things like that, but from a common sense point of view, yes, those are assets of value. You know, how do we -- you know, it's sitting there, it can still run, it certainly provides reliability value. Those units would be very valuable in the Bahamas, so there is salvage value. There's all different kinds of values that -- we are trying to be conservative and kind of go forward with an analysis.

COMMISSIONER SKOP: And I appreciate that. I think that is very innovative to look at either retiring assets, or selling them for salvage value, or if you have excess generation, looking at trying to give those to developing countries, or whatever, because that mitigates what I feel to be one of the central issues here is you don't need additional generation until 2023. You need this generation for a host of other reasons, but not really for reliability.

I mean, at the end of the day the Commission

has no ability to set or manage GRU's rates. We don't get -- we don't have jurisdiction of that. But there is a potential, you know, cost of doing anything. There is also an opportunity cost of not doing something. And so, again, I appreciate, you know, the innovation that GRU and the City of Gainesville and the City Commissioners and mayor have taken to try and address a forward-looking issue on the horizon. But, again, it would be a lot more comfortable to me if, you know, we didn't have -- or GRU didn't have such a high existing reserve margin as it currently does. And just one final question just on a side note. How long have you been at GRU?

THE WITNESS: Thirty years.

COMMISSIONER SKOP: Thirty years. So you were there when they discussed adding the large coal plant about three years ago, is that correct?

THE WITNESS: Oh, yes. That actually started in 2002. It was the head of the planning department at the time.

COMMISSIONER SKOP: All right. So just out of curiosity, given the high reserve margin that they currently have, which really hasn't changed much over the past three years, why would they add such a large base load capacity coal unit when they had such a high

reserve margin to begin with?

THE WITNESS: We were originally the founding members of the group that wound up proposing the Taylor project. And we went through all the studies, and all those kinds of IRP things that you do, and technology assessments, and so on. And an alternative that really came out was there's a lot of advantage on having the existing site with real access and gas and transmission access, and so the idea was to build it at Deer Haven and GRU was only going to take a part of it. It was a joint unit. And so we brought that forward at the time and that sparked a very lively debate.

COMMISSIONER SKOP: Oh, it did.

THE WITNESS: And I am very proud of our community. The issues we have addressed and gone through are the ones that I think are being discussed in Copenhagen today.

COMMISSIONER SKOP: Very well. Thank you. Thank you, again. And thank you for that clarification. Again, I think that from my perspective, I'm just trying to challenge assertions and assumptions that have been made to get to the meat of the need and when we are talking about base load generating units that are nowhere near the end of their service life falling off the cliff and becoming unreliable, I have to check and

challenge that assumption, because it's contrary to what we see through the state with our other IOUs that have coal plants operating well into their 60-year life, and they have the same operational issues for large base load coal plants as GRU probably experiences, but those plants for our other IOUs are currently running as we speak. So, thank you.

THE WITNESS: Well, speaking for all of GRU, we welcome this opportunity, and we stand ready to help answer any question you might have night or day.

COMMISSIONER EDGAR: Thank you. Mr. Wright, re-redirect.

MR. WRIGHT: No, thank you, Madam Chairman.

COMMISSIONER EDGAR: Okay. I think the only exhibit is we do have Exhibit 31. Does it make more sense to go ahead and take that up now or wait until the additional witness, Witness Bachmeier? Is there any need to --

MR. WRIGHT: Thank you, Madam Chairman. I think we can move it in now.

COMMISSIONER EDGAR: Okay.

MR. SAYLER: Staff agrees.

COMMISSIONER EDGAR: Staff agrees. Okay. Then with no objection Exhibit 31 is entered into the record at this time.

(Exhibit Number 31 admitted into the record.)

COMMISSIONER EDGAR: The witness is excused. And that brings us to your next witness, which I believe is stipulated, Mr. Wright.

MR. WRIGHT: If I could --

COMMISSIONER EDGAR: Please.

MR. WRIGHT: -- go back to Page 3 of the Comprehensive Exhibit List and move, ask that we, that you accept Exhibits 8 through 10 into the record.

COMMISSIONER EDGAR: Thank you. So entered.

(Exhibits 8 through 10 admitted into the record.)

MR. WRIGHT: Thank you. And that does bring us to Mr. Todd Kamhoot, who has been stipulated. He is here. He did take the oath. And I would simply ask first that his testimony be entered into the record as though read pursuant to our stipulation.

COMMISSIONER EDGAR: The prefiled testimony of Witness Kamhoot will be entered into the record as though read.

MR. WRIGHT: Thank you. Additionally, Mr. Kamhoot has sponsored two prefiled exhibits which are numbered 11 and 12 in the Comprehensive Exhibit List. I would ask that those be received into evidence at this time.

COMMISSIONER EDGAR: Exhibits 11 and 12 will

be entered into the record.

(Exhibits 11 and 12 marked for identification and admitted into the record.)

MR. WRIGHT: And, finally, Mr. Kamhoot sponsored Section 4 of the Need for Power Application. I would just ask that the record reflect that, that they were sponsored in by Mr. Kamhoot and are in evidence as per our stipulation on that Exhibit 27, I think.

COMMISSIONER EDGAR: So noted for the record.

MR. WRIGHT: Thank you, Madam Chairman.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF TODD KAMHOOT

ON BEHALF OF

GAINESVILLE REGIONAL UTILITIES AND

GAINESVILLE RENEWABLE ENERGY CENTER, LLC

DOCKET NO. _____

SEPTEMBER 18, 2009

Q. Please state your name and business address.

A. My name is Todd Kamhoot. My business address is 301 SE 4th Avenue, Gainesville, FL 32601.

Q. By whom are you employed and in what capacity?

A. I am employed by Gainesville Regional Utilities (GRU) as Lead Utility Analyst.

Q. Please describe your responsibilities in that position.

A. My responsibilities include developing customer, sales, demand, and revenue forecasts for electric, natural gas, water, and wastewater systems; providing rate design support and pricing maintenance for billing system software; providing training and support for use of customer relationship management and business information warehouse software and data systems within GRU's Strategic Planning Department; preparing fuel price forecasts for fuels used by power systems and the natural gas system; developing monthly billing summaries; maintaining billing history databases used for forecasting; research to facilitate

management decision making; providing statistical consultation to projects including customer satisfaction surveys, electric field inventory, load research surveys, coal pile inventory; providing analytical support for projects conducted in conjunction with the City of Gainesville general government including Affirmative Action Plan development and annexation analyses; coordination of annual preparation of GRU's Ten Year Site Plan and presenting conclusions to the Florida Public Service Commission and the Florida Reliability Coordinating Council; submission of responses to data requests to government and industry associations including the US Department of Energy – Energy Information Administration; Florida Public Service Commission; and Florida Reliability Coordinating Council; and active participation in the Florida Reliability Coordinating Council - Load Forecast Working Group since 1987.

Q. Please state your educational background and professional experience.

A. I received my Bachelor of Science degree in Statistics from the University of Florida. I have nearly 25 years of experience in the utility industry within GRU's Strategic Planning Department.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to present GRU's forecast of electrical power demand and energy consumption.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes. Exhibit No. __ [TK-1] is a copy of my resume. Exhibit No. __ [TK-2] summarizes GRU's current load forecast.

Q. Are you sponsoring any sections of Exhibit No. __ [GREC-1], the Gainesville Renewable Energy Center Need for Power Application?

A. Yes. I am sponsoring Section 4.0, which was prepared under my direct supervision.

Q. Please briefly describe the methodology used to develop the load forecasts for GRU.

A. GRU developed forecasts for the number of customers, energy sales, and seasonal peak demands for 2009 through 2044. Separate energy sales forecasts were developed for each of the following customer segments: residential, general service non-demand, general service demand, large power, outdoor lighting, sales to Seminole for Clay Electric Cooperative (Clay), and sales to City of Alachua (Alachua). Separate forecasts of the number of customers were developed for residential, general service non-demand, general service demand, and large power retail rate classifications. The basis for these independent forecasts originated with the development of least-squares regression models. The data used by these models is a combination of historical energy usage and customer information from GRU's records and independent third-party forecasts

of population and economic indicators, such as income and employment. I performed all modeling using the Statistical Analysis System (SAS)[1].

The forecast of total system energy sales was derived by summing energy sales projections for each customer class: residential, general service non-demand, general service demand, large power, outdoor lighting, sales to Clay, and sales to Alachua. Net energy for load was then forecast by applying a delivered efficiency factor for the GRU system to total energy sales. The projected delivered efficiency factor used in this forecast is 0.96. Historical delivered efficiency factors were examined from the past 25 years to make this determination. The impact of energy savings from conservation programs was accounted for in energy sales to each customer class, prior to calculating net energy for load.

The forecasts of seasonal peak demands were derived from forecasts of annual net energy for load. Winter peak demands are projected to occur in January of each year, and summer peak demands are projected to occur in August of each year, although historical data suggests the summer peak is nearly as likely to occur in July. The average ratio of the most recent 25 years' monthly net energy for load for January and August, as a portion of annual net energy for load, was applied to projected annual net energy for load to obtain estimates of January and August net energy for load over the forecast horizon. The medians of the past 25 years' load factors for January and August were applied to January

[1] SAS is the registered trademark of SAS Institute, Inc., Cary, NC.

and August net energy for load projections, yielding seasonal peak demand projections. Forecast seasonal peak demands include the net impacts from planned conservation programs.

Q. How are the energy and demand reductions associated with demand-side management (DSM) and conservation programs reflected in the load forecast?

A. Historical energy and demand reductions from GRU's DSM and conservation programs are implicitly included in the historical loads used in the regression models. Future energy and demand savings projected to result from GRU's conservation and energy efficiency programs are subtracted from the econometric forecast of retail sales used to develop the net energy for load and summer peak demand forecasts.

Q. Please summarize the base case net energy for load forecast.

A. The forecast annual net energy for load is projected to increase from 2,045 GWh in 2009 to 2,620 GWh in 2044. This represents an average annual growth rate of approximately 0.71 percent. The base case net energy for load forecast is presented in Exhibit No. __ [TK-2].

Q. Please summarize the base case summer peak demand forecast.

A. The forecast annual summer peak demand is projected to increase from 441 MW in 2009 to 503 MW in 2044. This represents an average annual growth rate of

approximately 0.38 percent. The base case summer peak demand forecast is presented in Exhibit No. __ [TK-2].

Q. Were any alternative load forecasts developed?

A. Yes. In addition to the base case forecast that I just described, probabilistic bands around the base case forecasts of net energy for load and summer peak demand were also developed. Historical forecast error from 1992 through 2008 was analyzed to determine both the standard deviation of historical forecast error and the trajectory of forecast error over time. The results of these additional load forecasts are presented in Exhibit No. __ [TK-2].

Q. In your opinion, is the process used for developing the demand and energy forecasts reasonable for planning purposes?

A. Yes. The process used in developing the demand and energy forecasts is appropriate for planning purposes.

Q. Does this conclude your testimony?

A. Yes.

MR. WRIGHT: And I'm ready to call Mr. Richard Bachmeier.

COMMISSIONER EDGAR: Let's do so.

RICHARD D. BACHMEIER

was called as a witness on behalf of Gainesville Regional Utilities and Gainesville Renewable Energy Center, LLC, and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. WRIGHT:

Q. Mr. Bachmeier. Good afternoon, Mr. Bachmeier.

A. Good afternoon.

Q. You previously took the oath to tell the truth when, when all the other witnesses were sworn, did you not?

A. Yes.

Q. Thank you. Would you please state your name and business address for the record?

A. My name is Richard D. Bachmeier. My business address is 301 Southeast 4th Avenue, Gainesville, Florida 32601.

Q. Thank you. And are you the same Richard Bachmeier who prepared and caused to be filed in this proceeding prefiled direct testimony consisting of seven pages?

A. Yes, I am.

Q. Do you have any changes or corrections to that testimony?

A. No, I don't.

Q. If I were to ask you the questions contained in that prefiled testimony today, would your answers be the same?

A. Yes, they would.

Q. And do you adopt it as your sworn testimony to the Florida Public Service Commission today?

A. Yes.

MR. WRIGHT: With that, Madam Chairman, I would respectfully ask that Mr. Bachmeier's prefiled direct testimony be entered into the record as though read.

COMMISSIONER EDGAR: The prefiled testimony will be entered into the record as though read.

MR. WRIGHT: Thank you.

BY MR. WRIGHT:

Q. And I would also note that Mr. -- let me ask this. Mr. Bachmeier, you also prepared and caused to be filed in this proceeding prefiled Exhibits RDB-1 through RDB-3; is that correct?

A. Yes, I did.

Q. Do you have any changes or corrections to

those exhibits?

A. No, I don't.

Q. Thank you.

MR. WRIGHT: Madam Chairman, I would note that those have been marked for identification in the Comprehensive Exhibit List as Exhibits 13 through 15.

COMMISSIONER EDGAR: So noted. Thank you.

(Exhibits 13 through 15 marked for identification.)

MR. WRIGHT: Excuse me one second. And just for the record, we have already addressed Mr. Bachmeier's corrected responses to the staff's interrogatories that were part of the staff's original stipulated exhibit list, but those corrected responses have already been received as Exhibit 26.

COMMISSIONER EDGAR: Thank you.

MR. WRIGHT: Thank you.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF RICHARD D. BACHMEIER

ON BEHALF OF

GAINESVILLE REGIONAL UTILITIES AND

GAINESVILLE RENEWABLE ENERGY CENTER, LLC

DOCKET NO. _____

SEPTEMBER 18, 2009

Q. Please state your name and business address.

A. My name is Richard D. Bachmeier. My business address is 301 SE 4th Avenue, Gainesville, FL 32601.

Q. By whom are you employed and in what capacity?

A. I am employed by Gainesville Regional Utilities (GRU) as the Electric System Planning Director.

Q. Please describe your responsibilities in that position.

A. My responsibilities include the planning and execution of GRU's long-term electric supply and transmission strategies, oversight of GRU's long-range production cost projections, structuring and pricing long-term wholesale power contracts, and coordinating GRU's NERC Reliability Compliance program. I have authored requests for proposals (RFPs) and developed the methodology for evaluating biomass generation projects. I have also participated in contract

negotiations for the Gainesville Renewable Energy Center (GREC) biomass facility.

Q. Please state your educational background and professional experience.

A. I received my Bachelor of Science degree in Mathematics and a Bachelor of Arts degree in Economics from the University of North Dakota. I have a Master of Applied Geography degree from Texas State University (formerly Southwest Texas State University) and am a Ph.D. Candidate in Economics from the University of Texas at Austin.

Prior to joining GRU in 2007, I held positions with the Orlando Utilities Commission (OUC), TXU Energy, Enron Corporation, the Public Utility Commission of Texas, and the University of Texas at Austin. I have nearly 25 years of professional experience in the electric power industry encompassing competitive issues, utility risk management, product structuring, retail pricing, and system planning. Specific areas of expertise include utility resource planning; environmental economics and policy; risk management; utility regulation, policy, and ratemaking; financial modeling and analysis; and product development and pricing.

I have presented expert testimony in more than 20 regulatory proceedings at the Public Utility Commission of Texas, and have been involved in 7 different research papers or publications.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to discuss the process used by GRU in selecting the proposed GREC biomass facility and to discuss the studies that indicate the GREC biomass facility will not negatively impact the electric transmission system in the Florida Reliability Coordinating Council, Inc. (FRCC) Region.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes. Exhibit No. __ [RDB-1] is a copy of my resume. Exhibit No. __ [RDB-2] presents the initial recommendations made to the Gainesville City Commission (City Commission) by GRU evaluation staff and the final approved factor weights for use in evaluating biomass proposals. Exhibit No. __ [RDB-3] is a copy of the FRCC's letter approving interconnection of the GREC.

Q. Are you sponsoring any sections of Exhibit No. __ [GREC-1], the Gainesville Renewable Energy Center Need for Power Application?

A. Yes. I am sponsoring Sections 8.5 and 14.0, which were prepared either directly by me or under my direct supervision.

Q. When did GRU begin to specifically consider biomass generation through a formal competitive solicitation?

A. GRU's two step process to solicit biomass generation began with the issuance of an RFP in October 2007.

Q. Please describe the two step process.

A. The first step of the process allowed non-binding proposals with indicative pricing to be submitted by potential bidders. This step was taken to ensure maximum competitive participation in the solicitation and submittal of the widest range of business plans and technologies. Responses to the RFP were ranked based on factors including price, risk control, environmental emissions, applicant qualifications, and technical merit.

The next step of the RFP process was to invite the three top-ranked bidders to submit binding proposals. Prior to the due date for binding proposals, GRU evaluation staff presented a proposed evaluation methodology to the Gainesville City Commission. The City Commission approved the 14 overall factors and associated factor weights to be applied in the evaluation of the binding biomass proposals. Exhibit No. __ [RDB-2] presents the initial recommendations made to the City Commission by GRU evaluation staff, and also presents the final factor weights approved by the City Commission. In general, the City Commission's final approved factor weights modified GRU staff's recommendations by emphasizing unit efficiency out of concern for resource requirements. The three broad criteria that the 14 factors constituted, along with their weights, included environmental considerations (30 percent), economic considerations (37 percent), and risk and reliability considerations (33 percent).

Q. Please summarize the binding proposals received by GRU in response to the second step of the process.

A. GRU received three binding proposals, presenting a total of 8 options, all of which were fueled with 100 percent biomass. The 8 options are summarized as follows:

- Covanta Energy (all facilities at GRU's Deerhaven site):
  - 50 MW net power purchase agreement (PPA)
  - 50 MW net GRU financed and owned (engineer, procure, and construct [EPC])
  - 58 MW gross PPA with auxiliary power purchase
  - 58 MW gross GRU EPC with auxiliary power purchase
- Nacogdoches (all now American Renewables):
  - PPA for 50 percent of 100 MW net facility at Deerhaven site
  - PPA for 100 percent of 100 MW net facility at an alternative (undisclosed) site
  - PPA for 100 percent of 100 MW net facility at Deerhaven
- Sterling Planet, Inc
  - PPA for 30 MW net facility at Deerhaven

Q. What were the results of GRU's evaluation of the 8 binding proposal options?

A. GRU's evaluation team determined that the 100 MW PPA with American Renewables (which is the PPA with GREC LLC) for 100 percent of the output from a biomass facility at Deerhaven was the best long-term option for GRU.

Final results and recommendations were presented to the City Commission at open meetings on April 28 and May 12, 2008. At the May 12, 2008 meeting, the City Commission voted unanimously to authorize GRU to negotiate a PPA with GREC LLC for 100 percent of the output of a 100 MW net biomass facility to be constructed and operated by GREC LLC at the Deerhaven site.

Q. Has the FRCC reviewed the GREC biomass facility with respect to the Peninsular Florida bulk electric transmission system?

A. Yes. The GREC facility will be interconnected to the existing GRU system. The FRCC Transmission Working Group (TWG) and Stability Working Group (SWG) evaluated the proposed interconnection and determined that the proposed interconnection of the GREC facility to serve GRU's load is reliable, adequate, and does not adversely impact the FRCC Region.

The findings of the TWG and SWG indicated that the transmission system remained within all required thermal and voltage limits; all fault currents remained within the capability limits of all circuit breakers; and the regional system was stable with controlled load loss as allowed by NERC Reliability Standards. The FRCC Planning Committee approved the interconnection of the GREC facility on September 8, 2009. Exhibit No. __ [RDB-3] presents a copy of the FRCC's letter approving the interconnection of the GREC facility.

Q. Does this conclude your testimony?

A. Yes.

BY MR. WRIGHT:

Q. And, Mr. Bachmeier, could I ask you to please identify just by number those sections of the Need for Power Application that you are sponsoring?

A. Sections 8.5 and Section 14.0. I believe it's all of Chapter 14.

Q. Thank you. Mr. Bachmeier, would you please summarize your testimony for the Commission?

A. Sure. Good afternoon, staff, Commissioners. The purpose of my testimony is to describe the competitive process used by GRU in selecting the proposed Gainesville Renewable Energy Center biomass facility. I also discussed the results of studies that indicate the GREC biomass facility will not negatively impact the electric transmission system in the Florida Reliability Coordinating Council region or the FRCC.

GRU began a two-step competitive solicitation for biomass generation with the issuance of a request for proposals or an RFP in October of 2007. The first step of the process allowed potential bidders to submit nonbinding proposals with indicative pricing. This step was taken to ensure maximum competitive participation in the solicitation and the submittal of the widest range of business plans and technologies.

GRU received 11 responses to the RFP in step

one, nine of which were judged qualifying proposals. GRU evaluation staff ranked the nine proposals based on 14 factors that were grouped into three broad categories: Environmental performance, economics and risk and reliability.

The rankings were presented to the Gainesville City Commission at a public meeting on January 28th of 2008, and the City Commission approved the rankings.

In the second step of the selection process GRU invited the three top ranked bidders to submit binding proposals. Prior to the due date for the submission of the binding proposals, GRU evaluation staff presented a proposed evaluation methodology to the Gainesville City Commission for review. The City Commission revised and approved the final 14 overall factors and associated factor weights that were applied in the evaluation of the binding biomass proposals in a public hearing in Gainesville on March 24th, 2008.

In general, the City Commission's final approved factor weights modified GRU staff's recommendations by emphasizing unit efficiency out of concern for resource requirements. The final weights for the three broad categories were environmental performance was judged at 30 percent, economics at 37 percent and risk and reliability, 33 percent, for a

total of 100.

GRU received binding proposals from the three bidders on April 11th, 2008. The proposals offered a total of eight options, all fueled with 100 percent woody biomass, and included facilities with net generating capacities of 30, 50 and 100 megawatts. GRU's evaluation team determined that the 100 megawatt PPA with American Renewables, now GREC LLC, for 100 percent of the output from a biomass facility at the Deerhaven site was the best long-term option for GRU.

Final results and recommendations were presented to the Gainesville City Commission at open meetings on April 28th and May 12th, 2008. At the May 12th, 2008, meeting the City Commission voted unanimously to authorize GRU to negotiate a PPA with GREC LLC for 100 percent of the output of a 100-megawatt net biomass facility to be constructed and operated by GREC LLC at the Deerhaven site. Following extensive negotiations, the Gainesville City Commission approved the PPA with GREC LLC at a public meeting in Gainesville on May 7th of 2009.

My testimony also addresses whether the addition of the GREC facility will have any negative impact on the Florida Transmission System. The Florida Reliability Coordinating Council, or FRCC, the

transmission working group and the stability working groups of the FRCC evaluated the proposed interconnection and determined that the proposed interconnection of the GREC facility to serve GRU's load is reliable, adequate and does not adversely impact the FRCC region. The FRCC Planning Committee approved the interconnection of the GREC facility in September of 2009.

And that concludes my testimony summary. I look forward to answering your questions.

MR. WRIGHT: Mr. Bachmeier is available for cross-examination, Madam Chairman.

COMMISSIONER EDGAR: Thank you. Are there questions from the bench for this witness? Questions? No questions? No questions from the bench for this witness? Okay. Are there questions from staff?

MS. BROWN: Just one clarifying question.

CROSS EXAMINATION

BY MS. BROWN:

Q. Mr. Bachmeier, good afternoon. I'm Martha Brown with the staff.

A. Hi.

Q. Fortunately or unfortunately, Mr. Regan had the opportunity to answer all of the questions that we had for you, so I now just have one clarifying question.

A. He's well qualified for that.

Q. Just now in your summary and on Page 4 of your testimony you talked about the City Commission modifying the factors that you had recommended to start with. And you say on Line 18 that they -- "by emphasizing unit efficiency out of concern for resource requirements." Could you explain what you mean by that? What concern did they have for resource requirements?

A. Yes. If you look at Exhibit Number RDB-2, the first column under weighted percentage were the initial GRU staff recommendations of the weights. We had originally, when we looked at the long list, not the short list, if you, if you look in economics, the second item under that is project variable production costs. When we presented that to the Commission, we had a zero weight there because after our first round of evaluations of the, of the nine, the long list of nine, we found that that wasn't a very important factor, so we decided to move weights around into other categories.

When we presented that to the City Commission, the Commissioners asked us, don't we want to look at the heat rate, because we want to look at how, how efficient the unit is going to be in using resources. So we used that, that zero and raised that to a five, and we graded it as, as unit heat rate. And that was one of the

changes that the City Commission made in the final rankings.

MS. BROWN: That answers my question, and we have no further. Thank you.

COMMISSIONER EDGAR: Thank you. Mr. Wright.

MR. WRIGHT: Thank you, Madam Chair. I would move the admission of Exhibits 13 through 15.

COMMISSIONER EDGAR: 13, 14 and 15 will be entered into the record. And you are excused.

THE WITNESS: Thank you.

COMMISSIONER EDGAR: Thank you.

(Exhibits 13 through 15 admitted into the record.)

Mr. Wright, call your next witness.

MR. WRIGHT: Thank you, Madam Chairman.

GRU and the GREC LLC call Mr. Joshua H. Levine.

JOSHUA H. LEVINE

was called as a witness on behalf of Gainesville Regional Utilities and Gainesville Renewable Energy Center, LLC, and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. WRIGHT:

Q. Mr. Levine, you took the oath with all the other witnesses, did you not?

A. I did.

Q. Thank you. Would you please state your name and business address for the record?

A. Yes. My name is Joshua H. Levine. My business address is 75 Arlington Street, Fifth Floor, Boston, Massachusetts 02116.

Q. Are you the same Joshua H. Levine who prepared and caused to be filed in this proceeding prefiled direct testimony consisting of ten pages?

A. I am.

Q. Do you have any changes or corrections to make to that testimony?

A. I do.

Q. Thank you. Madam Chairman, just so y'all will know, Mr. Levine, like Mr. Regan, had filed some errata that we have agreed to handle at the end, but he will walk through the changes item by item.

COMMISSIONER EDGAR: Okay.

THE WITNESS: On Page 4 of my direct testimony on Line 4 and Line 5 the sentence should read, "GREC LLC has leased an approximately 131 acre parcel of land."

On Page 5, on Line 6 or 7, the words "selective non-catalytic reduction (SNCR)" should be removed. We will be utilizing a selective catalytic reduction system.

On the bottom of Page 6 and the top of Page 7, it should read, "The GREC will have a conveyor leading from the storage pile to the boiler metering bins," not "two."

And on Page 9 of my testimony in the final paragraph, Lines 17 through 24, it should read, "In addition to the GREC facility, American Renewables developed a nearly identical biomass energy facility in Sacul, Texas, and is currently developing a nearly identical biomass energy facility in Hamilton County, Florida." The next sentence is left alone. And the sentence after that should read, "American Renewables sold the Texas facility to Southern Power in October 2009 and construction began in October 2009." That concludes the changes within my testimony.

Within the sponsored sections --

BY MR. WRIGHT:

Q. You also prepared and caused to be filed one exhibit, JHL-1; correct?

A. That's correct.

Q. And for the record that has been identified in the Comprehensive Exhibit List as Exhibit 16 for identification.

(Exhibit 16 marked for identification.)

And now if you would continue to identify the

sections of the Need for Power Application that you sponsored.

A. The sections of the Need for Power Application that I have sponsored is all of Section 9, with the exceptions of 9.3 and 9.5, which were sponsored by Mr. Regan, and I've also sponsored Section 17.

COMMISSIONER EDGAR: And we do have errata changes to those.

MR. WRIGHT: Yes, we do.

COMMISSIONER EDGAR: Let's go ahead and walk through them.

THE WITNESS: Okay. On Page 9.1, in the first full paragraph under Section 9.1, it should say, "The GREC facility will be designed, constructed, owned and operated by GREC LLC, a subsidiary of American Renewables, LLC, a profit, a private for-profit renewable power producer that signed a contract to construct a similar facility for Austin Energy, Texas, and recently sold this facility to Southern Power," and then that's a period. And a new sentence, "American Renewables is developing another similar facility in Hamilton County, Florida." The exact same change is on Page 17-1, so I won't walk through that, if that's okay with you.

COMMISSIONER EDGAR: Okay. That's fine.

THE WITNESS: It's under 17.1.

On Page 9.2 at the very, the second to the last line of the, of the page, the words "selective non-catalytic reduction (SNCR) or a" should be deleted.

And on 9.4, the third line from the bottom, it should just read, "The GREC will have a conveyor leading from the storage piles."

And then on Section, I'm sorry, on Page 9.6, which is Table 9.2, we have updated some of the finish dates of the items. The fourth item which was filed are prevention of significant deterioration application. That was filed on November 30th of 2009. That is the same for Item 5, which is our filing our site certification application with FDEP. That also was filed on November 30th, 2009.

The -- we intend to file the Gainesville site plan application, Item 6, on March 10th of 2010. The PSC need determination final order by our schedule should be issued by March 1st of 2010. The Gainesville site plan final approval should be issued on May 13th, 2010. We anticipate site certification approval by December 7th, with a project financing completion soon thereafter on December 15th, 2010, and a construction start immediately after the financing close on December 16th. The final two items are left alone. And

that concludes the corrections to my exceptions.

MR. WRIGHT: Thank you, Mr. Levine. Madam Chairman, I would ask that Mr. Levine's prefiled direct testimony as modified be entered into the record as though read.

COMMISSIONER EDGAR: The prefiled direct testimony of the witness will be entered into the record as though read with the changes noted by the witness.

MR. WRIGHT: Thank you.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REVISED DIRECT TESTIMONY OF JOSHUA H. LEVINE

ON BEHALF OF

GAINESVILLE REGIONAL UTILITIES AND

GAINESVILLE RENEWABLE ENERGY CENTER, LLC

DOCKET NO. 090451-EM

SEPTEMBER 18, 2009 **(REVISED DECEMBER 18, 2009)**

Q. Please state your name and business address.

A. My name is Josh Levine. My business address is 75 Arlington Street, Fifth Floor, Boston, MA 02116.

Q. By whom are you employed and in what capacity?

A. I am employed by American Renewables, LLC (American Renewables) as Director of Project Development.

Q. Please describe your responsibilities in that position.

A. As Director of Project Development, I oversee all American Renewables' biomass project developments in Florida. I am the project manager and primary developer on the Gainesville Renewable Energy Center (GREC) biomass project, and I am involved in business development activities for American Renewables ranging from identifying new project opportunities to partnership development and acquisition identification.

Q. Please state your educational background and professional experience.

A. I received my Bachelor of Arts in Economics degree from Connecticut College, and I have a Master of Environmental Management degree from the Yale University School of Forestry and Environmental Studies and a Master of Business Administration degree from the Yale University School of Management.

Prior to joining American Renewables, I held positions researching impacts to natural resources from natural and man-made disasters, environmental management consulting, energy analysis, and energy project development.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to discuss the proposed GREC biomass project. I will discuss the developers of the proposed project, provide a description of the major components of the facility, discuss the fuel handling and supply for the facility, and provide a summary of the project schedule. I will also discuss the ability of the project developers to finance the proposed GREC biomass project.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes. Exhibit No. __ [JHL-1] is a copy of my resume.

Q. Are you sponsoring any sections of Exhibit No. __ [GREC-1], the Gainesville Renewable Energy Center Need for Power Application?

A. Yes. I am sponsoring Section 9.0 (with the exception of Sections 9.3 and 9.5) and Sections 17.0 and 17.1, all of which were prepared either by me or under my direct supervision.

Q. What is the relationship between American Renewables and GREC LLC?

A. American Renewables is the sole owner of GREC LLC.

Q. Has GREC LLC executed a power purchase agreement (PPA) with Gainesville Regional Utilities (GRU)?

A. Yes. GREC LLC executed a PPA with GRU on April 29, 2009, which provides GRU with the full output of the facility along with all of the associated environmental attributes such as renewable energy credits. The Gainesville City Commission approved the PPA on May 7, 2009.

Q. Please describe how the developers of the GREC biomass facility are structured.

A. The GREC facility will be designed, constructed, owned, and operated by GREC LLC, which is a subsidiary of American Renewables, a private renewable power producer. American Renewables is jointly owned by affiliates of BayCorp Holdings, LTD, Energy Management, Inc., and Tyr Energy. These entities are discussed in more detail in Section 9.1 of the GREC Need for Power Application, Exhibit No. __ [GREC-1].

Q. Where will the GREC biomass facility be located?

A. The GREC biomass facility will be located within the confines of GRU's existing Deerhaven site. GREC LLC has leased an approximately 131 acre parcel from the City of Gainesville (doing business as GRU) under a long-term lease agreement.

Q. Will GRU be entitled to all of the output from the proposed GREC biomass facility?

A. Yes. GRU will have title to 100 percent of the plant's output, including all energy and all existing and future environmental attributes (i.e. renewable energy credits, carbon offsets, etc.).

Q. Please provide a brief overview of the proposed GREC biomass facility.

A. The proposed GREC biomass facility will be nominally rated at 100 MW net (116 MW gross) and will be fueled entirely by clean, woody biomass. Major aspects of the facility include the biomass fuel handling system, the biomass-fired boiler, a condensing steam turbine generator with evaporative cooling towers, and auxiliary support equipment.

The GREC facility will utilize a zero liquid discharge system to eliminate industrial wastewater discharges, in accordance with the Deerhaven site's current restrictions pursuant to its current certification. The facility will be

designed such that, with standard operating and maintenance practices, the GREC biomass facility will provide full service over its 42 year design life.

The GREC biomass facility will utilize a fluidized bed boiler to produce superheated steam. The boiler will be equipped with a bag house to control particulate matter, and an aqueous ammonia injection selective catalytic reduction (SCR) system will be provided to control NO_x emissions. Superheated steam from the boiler will be admitted to a single steam turbine with four extractions for feed water heating. The steam turbine will generate electricity before exhausting axially into the condenser with cooling water provided from the wet evaporative cooling tower.

Electric power will be produced in the steam turbine generator at the nominal generator voltage. The facility will increase the voltage at an on-site substation and transmit the power through aerial transmission lines to the interconnection point with GRU's looped 138 kV transmission system. GRU's transmission system is interconnected with Progress Energy Florida and Florida Power & Light. When the steam turbine generator is off-line, station service power will be served by GRU's system.

Q. Will the GREC biomass facility be capable of running at less than full rated load?

A. Yes. The unit can be operated anywhere between 70 percent to 100 percent of its maximum output in order to meet operational or economic requirements. In

addition, the PPA between GRU and GREC LLC allows GRU the ability to take the unit completely off-line.

Q. Is GREC LLC guaranteeing the availability of the GREC biomass facility?

A. Yes. In the four summer months, the overall guaranteed availability is 95 percent and on an annual basis, it is 90 percent.

Q. Will the GREC biomass facility be capable of burning multiple forms of biomass?

A. Yes. The primary fuels for GREC will be forest residue, mill residue, pre-commercial tree thinnings, used pallets, and urban wood waste which includes woody tree trimmings that are generated by landscaping contractors, power line clearance contractors, and other non-forestry related sources of woody debris. Supplementary fuels could include herbaceous plant matter, agricultural residues, diseased trees, woody storm debris, whole tree chips, and pulpwood chips. The facility is not designed to use any form of treated wood, municipal solid waste, coal, petroleum coke, oil, or tires.

Q. Please discuss how biomass fuel will be handled on-site.

A. The biomass fuel handling system will consist of three truck tippers, two sets of screens and hogs, an automatic stacker/reclaimer system and a manual stacker/reclaimer system. Biomass fuel will be transported in a processed-form (i.e. chipped or ground) to the GREC by truck. This fuel will be transported into and out of on-site storage via a series of conveyors. The GREC will a conveyor

leading from the storage piles to the boiler metering bins. From the metering bins, the fuel will be gravity fed into air swept distribution feeders and then blown by combustion air into the boiler.

Q. Has a reliable, long-term supply of fuel been identified for the GREC biomass facility?

A. Yes. GREC LLC has spent significant resources working with the forestry industry and urban wood waste suppliers in north central Florida, sometimes accompanied by GRU staff. GREC LLC is in a position to enter into a number of long term contracts with favorable pricing, with put and call options exceeding 100 percent of the fuel required for the facility.

Q. How will the cost of obtaining fuel for the GREC biomass facility be structured?

A. GREC LLC does not intend to fix the price for 100 percent of the fuel in order to take advantage of opportunity fuels from storms, land development, etc. The cost drivers for forest derived fuel are the grower's premium (i.e., stumpage), diesel fuel, equipment costs, and labor. GREC LLC may be able to extract a tipping fee for some of the fuel, which is credited to the GREC's production cost. Experience around the state suggests that this form of fuel supply is relatively stable with projected cost escalation below CPI and will provide an excellent hedge against gas price volatility. GRU will have full audit review of all aspects of fuel procurement and cost.

Q. When will the GREC biomass facility begin commercial operation?

A. The GREC biomass facility is planned for commercial operation beginning December 1, 2013. Commercial operation prior to January 1, 2014 allows the GREC project to take advantage of the Renewable Energy Grant contained in H.R. 1 (the American Recovery and Reinvestment Act of 2009) Sec. 1603. The Renewable Energy Grant allows for a reduction in the cost of energy of $8.10/MWh for the entire 30 year term of the PPA.

Q. Will project financing be in place for GREC LLC to support this commercial operation date?

A. Yes. GREC LLC is currently planning on completing project financing by November 30, 2010. Construction of the GREC biomass facility is scheduled to begin December 1, 2010, which allows for 36 months of construction prior to commercial operation of the facility.

Q. How does GREC LLC intend to finance the GREC biomass facility?

A. GREC LLC is planning on pursing a traditional project financing approach involving senior long-term debt and additional equity as necessary. Senior bank debt will be secured by first priority liens on substantially all of the assets and commercial agreements associated with, as well as a pledge of equity in, the GREC biomass facility. Additional equity will flow into the project as needed from both strategic and tax motivated equity investors.

Q. What elements are critical for the successful project financing of the GREC facility?

A. Successful project financing will depend on many factors including: the experience and financial capability of the project developers who will own, operate, and maintain the plant; the strength and quality of the PPA; the credit quality of the PPA counterparty (i.e., GRU); and the experience of construction contractors and the strength and quality of the construction contracts.

Q. Does American Renewables have experience developing and financing energy generation projects?

A. The parent companies of American Renewables have a long and successful track-record of energy and power asset development and operation having successfully developed, financed, and operated over 1,000 MW of energy generation facilities, including biomass-fueled facilities as well as conventional and other renewable energy generation facilities. They also have a pipeline or deployment budget of $2.5 billion for US renewable power plants over the next five years. In addition to the GREC facility, American Renewables developed a nearly identical biomass energy facility in Sacul, Texas and is currently developing a nearly identical biomass energy facility in Hamilton County, Florida. For American Renewables' Texas facility, a 20 year PPA has been executed with Austin Energy, a municipally-owned utility. American Renewables sold the Texas facility to Southern Power in October 2009 and construction began in October 2009.

Q. Does this conclude your testimony?

A. Yes.

BY MR. WRIGHT:

Q. Mr. Levine, please summarize your testimony.

A. Good afternoon, Commissioners and PSC staff. The purpose of my testimony in this proceeding is to describe the corporate structure of Gainesville Renewable Energy Center, LLC, and its parent company American Renewables and their ability to finance the proposed Gainesville Renewable Energy Center, or GREC as it is known. I will also provide a description of the major components of the proposed biomass facility, discuss the biomass fuel handling and supply for the facility and provide a summary of the project schedule.

The GREC facility will be designed, constructed, owned and operated by Gainesville Renewable Energy Center, LLC, or GREC LLC. GREC LLC, is a project company solely owned by American Renewables. American Renewables is collectively owned by three parent companies: BayCorp Holdings in Portsmouth, New Hampshire, Energy Management in Boston, Massachusetts, and Tyr Energy in Kansas City, Kansas.

Between the three parent companies they have successfully developed, financed, constructed and operated over 1,000 megawatts of energy generation facilities, including biomass-fueled facilities as well as conventional and other renewable energy generation

facilities.

They also have a pipeline or deployment budget of $2.5 billion for U.S. renewable power plants over the next five years. In addition to the GREC facility, American Renewables developed a nearly identical biomass energy facility in Sacul, Texas, which had a 20-year power purchase agreement with Austin Energy. This facility was recently sold to Southern Power and began construction in October of 2009. American Renewables is also developing a similar biomass energy facility in Hamilton County, Florida.

On April 29th, 2009, GREC LLC executed a power purchase agreement with GRU. This PPA provides GRU with all the energy and capacity of the facility, along with all of its associated environmental attributes for a period of 30 years. On May 7th, 2009, this PPA was unanimously approved by the Gainesville City Commission.

The GREC biomass facility will be located adjacent to GRU's Deerhaven generating station, an existing energy generation facility, on an approximately 131-acre parcel of land that GREC LLC has leased from the City of Gainesville under a long-term lease agreement.

The proposed GREC facility will be a nominally rated 100 megawatt net biomass energy generation

facility. GREC will be fueled entirely by clean woody biomass material. GREC will use proven technology that has been commercially available for decades in both the United States and across the world. The major components of the facility include a bubbling fluidized bed boiler, a condensing steam turbine generator with evaporative cooling towers, and an associated biomass fuel handling system consisting of three truck tippers, an automatic stacker/reclaimer and a fixed stacker. The GREC facility will meet all applicable environmental regulations with state of the art emissions controls.

Construction of the GREC facility will begin in late 2010, with an anticipated commercial operations date of December 2013. The primary fuels that GREC will utilize will be forest residue such as the slash and brush left over from the traditional forestry operations, mill residue, precommercial thinnings, used pallets and urban wood waste, which includes woody tree trimmings that are generated by landscaping contractors, power line clearance contractors, and other non-forestry related sources of woody debris. In addition, the GREC facility will be able to utilize opportunities fuels such as storm debris and diseased trees.

The facility is not designed for and it will not use any form of treated wood, municipal solid waste,

coal, petroleum coke, construction and demolition wood, oil or tires.

Our company has expended significant effort working with the forestry industry and urban wood waste suppliers in North Central Florida to assess the GREC wood basket and understand how much biomass material GREC can anticipate receiving and at what price. GREC LLC is confident that it will be able to source the necessary biomass material within a 75-mile radius at an economic price level.

Similar to our experience in Texas, we intend to enter into a number of long-term contracts with local landowners and biomass suppliers with call options exceeding 100 percent of the fuel required for the facility.

For the GREC facility we are planning on pursuing a traditional financing approach involving senior long-term debt and project sponsor equity. The senior bank debt will be secured by first priority liens on the project assets and commercial agreements, as well as with a pledge of equity in the project. Additional equity will flow into the project as needed from both strategic and tax-motivated equity investors. The project financing of the GREC facility will be supported by the experienced and financial capability of the

project developers, the strength and quality of the PPA, the credit quality of the PPA counter party and the experience of the construction contractors and the strength and quality of the construction contracts. This concludes the summary of my testimony. Thank you.

MR. WRIGHT: Thank you, Madam Chairman. Thank you, Mr. Levine. Mr. Levine is available for cross-examination.

COMMISSIONER EDGAR: Are there questions from the bench? Commissioner Skop.

COMMISSIONER SKOP: Thank you, Madam Chair.

Just one brief question to Mr. Levine. I guess you represent American Renewables. One of the concerns coming out of the community has been the transparency of the underlying agreement between American Renewables or GREC and GRU. And I thought in light of that desire and noting that, you know, certain things need to be confidential and remain proprietary and trade secret, but in light of the community's concern about having full transparency in the agreement, what would be your company's position in waiving confidentiality to open up that agreement such that the redactions would not be there?

THE WITNESS: I think it's important to point out before I answer that question, Commissioner Skop,

that we spent over a year negotiating with GRU in a one-on-one negotiation to successfully arrive at the PPA that you have before you. Significant effort was, was expended on our part as well as the GRU team to arrive at that negotiation and ultimate PPA.

If you take a look throughout the State of Florida and actually across the U.S., very few successful PPAs have been signed for biomass energy facilities, and it is our company's position that there are aspects of that contract that we are very reticent to, to release to our competitors as well as other parties that we will be negotiating with within the State of Florida as well as across the United States. So at this point we respectfully request to keep the PPA as you have it before you now.

COMMISSIONER SKOP: Thank you.

COMMISSIONER EDGAR: Commissioner Klement.

COMMISSIONER KLEMENT: Thank you.

COMMISSIONER EDGAR: Now I'm doing it.

COMMISSIONER KLEMENT: Thank you, Madam Chair.

Mr. Levine, several times during last week's hearing and today's reference has been made to the source of the fuel and whether it had been secured or not. I just note in your testimony here on Page 7 from Line 5 through Line 11 the question is asked and you

state pretty unequivocally, "GREC LLC is in a position to enter into a number of long-term contracts with favorable pricing, with put and call options exceeding 100 percent." What does, what does "in a position to enter into" these agreements mean?

THE WITNESS: What that means, Commissioner, is that we have had numerous conversations with large landowners, small landowners, biomass, forestry biomass suppliers, as well as urban biomass suppliers. We have signed confidentiality agreements, in some cases we have exchanged term sheets, but we have not to date executed any contracts. And when I say that we are in a position, I guess what we're really stating is that we intend to sign a long-term agreement with these potential landowners and suppliers similar to a strategy that we executed for our East Texas facility.

COMMISSIONER KLEMENT: Okay. Thank you. Oh, yeah, one other question, if I may.

Reference has been made, I think -- I didn't hear it today but last Wednesday at the, in Gainesville, to the ash, that there would be no residue. Where does the ash go? What do you do with it?

THE WITNESS: There's two types of ash that I just want to clarify. There's a small amount of what we call bottom ash, and that really would be any

incombustibles, inorganic material such as some rocks or other things that may make its way into the boiler. That's a very small amount. That will be disposed of according with solid waste regulations.

The fly ash, which is the majority of the ash that we're speaking about, that will be collected and can be put to beneficial reuse in a number of different applications, but primarily as a soil enhancement for agricultural and silvicultural operations.

COMMISSIONER KLEMENT: Okay. Thank you. That's all.

COMMISSIONER EDGAR: Other questions from -- oh, I'm sorry. Commissioner Skop.

COMMISSIONER SKOP: Thank you. Just two follow-up questions.

I don't know if you have a copy of it, but the, the yellow sheet handout, on Page 8 of 8 of that it lists respective fuel price assumptions for natural gas, coal, and, again, the biomass are confidential values.

What drove the basis for the natural gas pricing assumptions and why are the gas prices, particularly in the out years, should those be -- are those indicative of a high fuel forecast or mid forecast or low forecast for natural gas?

THE WITNESS: Commissioner Skop, I feel

comfortable speaking about the biomass fuel assumptions, but in terms of the natural gas assumptions, I think I would like to defer that question to Mr. Kushner, which will be speaking after, after myself.

COMMISSIONER SKOP: Okay. That's fine. I'll defer that.

Going back to Commissioner Klement's question about the fuel contracts and the puts and calls, I can understand a call, but on a put for fuel, are you, are you intending to hedge the cost of your fuel supply by entering into swap agreements?

THE WITNESS: It really would have probably been better stated as simply call options. There's a possibility to work with some, some more exotic financial instruments, as you've mentioned. That's probably not our intention.

COMMISSIONER SKOP: Okay. All right. Thank you for that clarification.

COMMISSIONER EDGAR: Questions from staff.

MS. BROWN: Yes, we have a few.

CROSS EXAMINATION

BY MS. BROWN:

Q. Good afternoon, Mr. Levine.

A. Good afternoon.

Q. I have an important introductory question to

ask you. How are you enjoying our Florida weather?

A. Very nicely. I live in southern New Hampshire, and I believe the temperature was about 23 degrees this morning, and I believe it was heading a little bit south of there, so.

Q. You described American Renewables and its member companies. I would like to ask you if -- and I think you said you had developed a thousand megawatts of generation, including biomass facilities; is that correct?

A. Yes. And that's our, that's our parent companies that I'm speaking of there. And specifically with respect to the biomass experience, one of our parent companies, Energy Management, or EMI, located in Boston, Massachusetts, developed one of the first biomass energy facilities in the U.S. in the mid '80s in Alexandria, New Hampshire. It was an approximately 16 megawatt net biomass facility.

Q. Was it ever constructed?

A. It was constructed and it operated for a number of years. EMI sold that facility I believe in the, in the late '80s, but I'm not, I'm not 100 percent positive on that date. The facility continued to run, it had a hiatus, and then it is now operating again.

Q. American Renewables, however, has not

previously constructed a biomass facility similar to the one at issue here; correct?

A. That's correct. We developed a similar facility in East Texas. We put that whole project together, including all of the equipment contracts, the contracts with the EPC contractors, and then that facility was sold a few months ago to Southern Power. They began construction on the exact facility that we designed at that time.

Q. Well, that gives rise to another couple of questions I have. If the -- how do you pronounce that, Sacul?

A. Sacul.

Q. Sacul.

A. Yeah.

Q. If the Sacul, Texas, facility was developed by you and then sold before construction began, what sort of provisions do you have for the development and potential sale once the project is developed under your PPA with GRU?

A. I'd like to clarify for a minute just on the East Texas facility in Nacogdoches. Our intention was to, as we did develop it, and to finance it, construct it and own and operate it. Unfortunately we brought that project to the financing market in late '08, early

'09. It was very difficult to anticipate the events that occurred in the world financial markets, and there were -- it was becoming exceedingly difficult to try to pull together the necessary bank debt and sponsor equity that we would, that we would need to, and it made sense, for the facility to actually move forward, be constructed, to sell that facility. That was not our intention, nor is it our intention to sell the GREC facility. We intend to, as I mentioned in my, the summary of my testimony, to conduct a project financing for that facility.

Q. But have you attempted to get financing for any other biomass project since you tried with the Texas project?

A. No. We, we developed the Texas facility and we attempted to get financing for that facility, ultimately sold that in the fall of 2009, and we have not begun the financing process for the GREC facility yet. We --

Q. But do you expect things to be different this time?

A. We anticipate and hope that they will be. There are some very good indications that the markets are adjusting and changing. And I think that rather than speculate, what I'll say is that our intention is

to conduct a project financing for this project.

Q. Would you agree that there are relatively few biomass plants of the scale of the GREC facility that have been constructed?

A. Within, within the United States, that is, that is correct. There are similar boilers in parts of Europe that are, that are using an almost identical technology and utilizing biomass as a fuel. Within the United States, I would agree that a 100 megawatt net facility is a, is a large biomass facility.

Q. Are there any others being constructed in the United States?

A. Right now, to my understanding, the only greenfield biomass energy facility that was financed and began construction in the last couple of years has been the Nacogdoches facility in East Texas that we developed.

Q. Okay. Now you said in your summary that you're planning to develop a similar facility in Hamilton County, Florida?

A. That's correct.

Q. What is the current status of, of the development of that project?

A. For our Hamilton County Renewable Energy Center we have an option, a site option agreement with

PCS, which is a large phosphate company, on an approximately 260-acre parcel of land that allows us to, to pay option payments annually, and then ultimately purchase that facility, purchase that site. We have begun preliminary design and some very early stage environmental review of that project. The main focus of that project at this time is to identify another off taker and negotiate a power purchase agreement for that facility, and that's what we're in the process of doing right now.

Q. If it's not confidential, can you tell the Commission who you're negotiating with?

A. We're negotiating and having conversations with a number of utilities within the State of Florida, and they are confidential conversations. I'm not, I'm not at liberty to discuss that.

Q. Okay. Okay. Do you have a copy of Exhibit 29 close by? That's GRU's PowerPoint presentation.

A. I do. Yes.

Q. Okay. If you would turn to Page 27.

A. You're speaking about the presentation from last Wednesday?

Q. Yes.

A. Okay.

Q. I want you to turn to Page 27 that talks about

fuel procurement areas.

A. I have that.

Q. It's the nice little map with the circle around it.

A. Yes. Yes.

Q. Can you describe for us where the Hamilton County project is in relation to this map? Is it off the map, or can you give us some direction of where it is?

A. Sure. I can tell you exactly where it is. If you, if you look at the GREC facility located in the middle with the red dot and if you can identify I-75, which runs from the GREC facility in a northwesterly direction, if you follow it past the yellow facility or the yellow dot in Columbia and follow it, you'll see a smaller road, Route 41 between White Springs and Jasper, and we're located approximately halfway between Jasper and White Springs. So we are within the 75-mile radius.

Q. All right. Thank you. There's been discussion today about adequate fuel supply, and I would like you to tell the Commission whether you believe this facility would have any specific impact, the Hamilton County facility would have any specific impact on GREC's ability to acquire sufficient fuel for its operation.

A. The existence of both the GREC facility as

well as our proposed Hamilton County facility would have an impact on the fuel price for both facilities. That would be a correct assumption that, that you've put forth.

We've conducted a few different assessments looking at the North Florida wood basket where we would be working with. We've taken into account existing competition, which I believe Commissioner Argenziano mentioned earlier, as well as all future competition. We feel comfortable that we can acquire the necessary fuel at the required price levels.

Q. So it's your opinion that increased competition for fuel might put some upward pressure on fuel prices but would not increase the cost of the project to GRU?

A. We've modeled the increased pressure into our, into our assumptions, into our assessments of the available fuel, and it is correct to say that they would have upward pressure. And -- but we have taken that into account.

Q. When you say you've taken it into account, does that mean that the upward pressure on fuel prices would not increase the cost of the project to GRU?

A. I guess what I mean by that, to clarify my statement, is that the, the upward pressure that would

be realized from existing competition and increased demand from future competition is already built into the pricing levels that we have been working with GRU on. So I'd say that those are built into the, to the assumptions that you have before you in your assessment. And so I would not expect there to be additional upward pressure because, as I've mentioned, they've already been incorporated.

Q. Okay. As I understand it, construction of the -- what are we calling this, GREC -- GREC facility is scheduled to begin December 1st, 2010, and scheduled to come online December 1st, 2013; is that correct?

A. That is correct.

Q. And according to your testimony, if the GREC facility is not in commercial operation by January 1, 2014, then the project loses its federal stimulus funding; is that correct?

A. Just to be clear, there's a number of different types of stimulus funding. If the facility comes online after January 1st, 2014, it would not currently, it would not be available, it would not be eligible for the investment tax credit, the ITC, or the renewable energy grant unless those programs are extended, which they have not been to date.

Q. Right. Okay. And that's what you testified

to on Page 8 of your testimony.

A. Yes.

Q. Okay. So the window -- under that scenario, the window that American Renewables has for unexpected construction delays, et cetera, all of the things that can go wrong in building a project of this nature, is approximately one month; correct?

A. I believe it's, it's a little bit more favorable than that. However, it is still correct to say that there are a number of moving pieces which need to be coordinated and executed for us to be able to begin construction and then begin commercial operations by the end of 2013.

Q. Okay. In your testimony at Page 8, Lines 2 through 7, you state that the financial impact, if the facility does not come online in time to meet the deadline for stimulus money, the effect on the project would be approximately $8.10 per megawatt hour on contract payments; correct?

A. That is correct. Yes.

Q. Which amounts to approximately 6.4 million per year?

A. That's correct.

Q. Okay. Thank you, Mr. Levine. That's all we have.

COMMISSIONER EDGAR: Commissioner Skop.

COMMISSIONER SKOP: Thank you. Just a few follow-up questions.

I guess going back to Page 27 of the, what was previously marked as Exhibit 29 for the fuel procurement areas, the staff questions focus on the increased competition for fuel and the upward pressure on fuel prices. And the Hamilton County facility that's being proposed to be built as well as the GREC facility, you know, those are just two facilities that have been discussed. What about the other facilities, some of which the Commission has approved, some of which -- I think there's one proposed in the Panhandle that's going to be built up in Gadsden County. What are those additional resources going to do to the competition for North Central Florida fuels as indicated there and how would, would that not further put increased competition, drive fuel prices upward or put pressure on prices?

THE WITNESS: In addition to the two facilities which my company is working on in North Florida, you are correct that there are additional projects being proposed and discussed for, for development. I am aware of another project in Hamilton County, and I believe you mentioned a facility in Gadsden County which was recently announced also. I do

not believe that there is a PPA for either of those projects. I think that any biomass energy development project being put forth by an independent power producer such as my, such as my company, that is a, a necessary piece of the equation for a project to move forward.

So I think that it's very easy to issue a press release and to say that you have a project under development. It's another one to actually execute on that development and bring it to fruition. So I think that I would just like to point out that there is, there is a number of proposed projects that could increase competition, but it's difficult to say how many of those would be executed upon.

COMMISSIONER SKOP: Okay. And I believe a prior witness testified that the fuel requirement for the proposed 100-megawatt biomass plant at the GRU Deerhaven site would be approximately one million tons of fuel source per year, subject to check. Would you agree with that?

THE WITNESS: I would. And that's one million green tons, and no need to check that.

COMMISSIONER SKOP: Okay. Looking at the 75-mile radius chart on Page 27 and noting that many of the dots reflect sawmills, chipping sawmills or pine sawmills or cypress mills, how is that residual, you

know, by-product of milling or wood chip waste going to provide a million tons of fuel source on a given basis, or do you anticipate having to go outside the 75-mile radius area via rail or import fuel to, from other areas or barge it in from other sources overseas to meet that fuel requirement?

THE WITNESS: The, in answer to your first question about how will a million green tons come from forestry residues and mill residue, the simple answer is that it will not. That will be a portion of our supply. There will also be a significant portion of fuel coming from some of the urban wood waste sources that I have, that I have talked about, primarily right-of-way clearings, land clearing activities from development projects, storm debris that may become available as an opportunity fuel. So there will be a number of different sources that will be coming together.

The 75-mile radius, there's nothing magic about that. That is really what we have determined to be our economic level of where we can transport the material from at an economic level.

There may be opportunities for us to acquire fuel that's beyond the 75-mile radius, if, for example, somebody paid us to, to take some material, which has occurred in other projects and likely to occur. I would

say that when we say our fuel comes from a 75-mile radius, that's a general statement which I think will hold true, but there will be exceptions to that.

And in answer to your last question about rail, we currently have no intention to bring fuel, biomass fuel to our facility via rail. There is rail that goes on to the Deerhaven facility site, but that's not incorporated into our design.

COMMISSIONER SKOP: Okay. In light of that, because, again, having experience working with a co-gen plant that used coal as fuel, I've got a good understanding of how many tons a standard railcar can handle. I'm not familiar with how many tons a, you know, a semi might be able to bring in at any given trip.

THE WITNESS: Yes.

COMMISSIONER SKOP: Could you lend some clarity into, you know, what per, how many, like --

THE WITNESS: I can. A standard semi truck that you mentioned are referred to in the industry as a chip van holds approximately 25 tons of biomass material. To, to help with the calculation, we anticipate, as it states on Slide 27, that we will be bringing in anywhere from 130 to 150 truckloads of fuel a day, and that's on an approximately 14- to 15-hour

delivery schedule.

COMMISSIONER SKOP: Okay. That lends me to just a few more final questions. You know, 130 to 150 trucks per day, certainly members of the community in the City of Alachua as well as those on the west side of Gainesville have expressed concern about the increased traffic.

Looking at that chart on Page 27, and from my colleague Commissioner Argenziano's former district in Dixie County, at least three of the potential sources are, you know, off of U.S. Highway 19 coming into, you know, either Newberry through Newberry Road, which is heavily trafficked, or coming in from Columbia County through 441 to the Deerhaven site. What is going to be done to, to mitigate and address those community issues? Again, traffic on Newberry Road coming in from west Gainesville is, you know, bumper to bumper on any given time during the day. So has any thought been given to that, given the frequency of and number of trucks that would have to go to the plant on a given day?

THE WITNESS: Yeah, we have. I have a couple of thoughts I'd like to share with you. First off, to address your question about, you know, traffic coming in from Newberry and at high times of the day, you know, the morning and the afternoon commuting times, one of

the ways that we're hoping to mitigate that is having the longer delivery hours.

Traditionally, the way that the loggers and suppliers would like to work with us is that they would like to be at our facility first thing in the morning, you know, on the order of, you know, 5:00 a.m. or so to be able to deliver the first load and then get back out into the woods or wherever their source of fuel is, and they really have no interest in being on a road that is at the peak hour of traffic commuting. So that's one, that's one thing is the hours that we are receiving fuel.

The other thing is to understand the potential impacts to the residents of Alachua and Newberry and others. We've conducted baseline traffic assessments on U.S. 441. The, our preliminary traffic results that we've conducted to date anticipate, anticipate that there will be no change in the level of service on those roads. We're in the process of working with our traffic consultants to conduct some additional traffic studies to better understand if there are issues at some of the other intersections that we have not currently analyzed yet.

COMMISSIONER SKOP: And just two final questions. I believe in Dr. Bussing's presentation he

indicated some concerns about the, the moisture content of the fuel supply and when that, you know, exceeds 40 percent or more you're running into issues of having to use supplemental, more high heat content fuel. At least in my former coal plant we used to throw in some pet coke there every once in a while to get things going right, but -- or tires too, but that's not very environmentally friendly. How do you, how would you address that concern, because it seems to have some validity?

THE WITNESS: I've heard Dr. Bussing testify to that both last week in Gainesville and this week. To be, to be frank with you, I'm not sure where his information is coming from. Our facility is designed to, to utilize a broad range of fuel moisture content, content levels, and we anticipate that our average, and that's average, moisture content will be at 45 percent. If we had an average moisture content in the 40s, that would be very good for our facility.

So there's no, at 45 percent, even at 50 percent or 55 percent moisture content there is absolutely no need for us to burn anything supplemental to assist in that. I'm not sure where his information came from or what technologies he's familiar with, but I can tell you from our facility that a, burning fuel that

has a higher moisture content than 40 percent is not an issue.

COMMISSIONER SKOP: Okay. So you don't -- it will not effect your heat rate, or performance issues, or efficiency of the unit at all?

THE WITNESS: We will obviously be much more efficient at a lower moisture content to a certain level, and that is why I say that we will have a target moisture content level of 45 percent. And the closer we can keep it to that and even potentially try to get it below that the more efficient our facility will be. So it does have an impact on our heat rate, but it does not require us to burn anything supplemental to offset high moisture fuel.

COMMISSIONER SKOP: But you would agree, would you not, that if moisture content goes up then more fuel or tons of fuel would be required per megawatt?

THE WITNESS: Yes.

COMMISSIONER SKOP: Okay. Given the variable fuel cost -- that has some impact on the variable fuel cost?

THE WITNESS: Yes, that is a factor and that is also one of the reasons why moisture level contents are built into the contracts that we will sign with our suppliers.

COMMISSIONER SKOP: Okay. Just one final question, and I don't know if any thought has been given to this, but, again, I appreciate the clarification on the number of trucks per day, which I think you mentioned is is 130 to 150 semis coming in. And they are not delivering things by rail, so it means the entire fuel supply is going to be driven by semis showing up.

THE WITNESS: That's correct.

COMMISSIONER SKOP: What analysis has been -- again, this is being touted as a carbon neutral type generating facility and the City of Gainesville is very environmentally friendly. But, you know, has any analysis been done to the emissions resulting from, you know, on a daily basis 150 semis, diesel semis coming in in terms of air quality or the emissions that just getting the fuel there itself adds to the equation versus what's saved versus, you know, the burning fuel, biomass on a zero emission basis versus, you know, the natural decay, or, you know, offsetting those emissions in some manner?

THE WITNESS: I believe that Mr. Regan testified to some of that in his testimony, and we have -- in addition to GRU looking at that, we have worked with experts in these fields to understand the

impact of diesel usage for both harvesting, processing, and delivering the material to the facilities. Obviously there will be some emissions from the diesel fuel, but in the scheme we are told that it is a very small number that does not overall impact the carbon neutrality aspect of biomass energy.

COMMISSIONER SKOP: Okay. Thank you.

COMMISSIONER EDGAR: You are done. And, Mr. Wright, that means we come back to you. Redirect.

MR. WRIGHT: I think just a couple, Madam Chairman.

REDIRECT EXAMINATION

BY MR. WRIGHT:

Q. You were asked a few questions about the potential upward pressure on fuel, on the biomass fuel cost.

A. Yes.

Q. The question I want to ask you is does GREC, LLC, your company, share -- bear part of the fuel cost risk?

A. We do.

Q. And so do you have an incentive to keep costs as low as possible?

A. We do. We are -- within the terms of the PPA between GREC, LLC, and GRU, we are aligned in our desire

to achieve the most economical fuel that meets our standards.

COMMISSIONER EDGAR: Commissioner Skop. Excuse me, Mr. Wright.

COMMISSIONER SKOP: Thank you, Madam Chair.

Just to that point, can you be more specific without giving confidential details, is there a specific contractual provision that you could reference me to that would allow me to look at that risk sharing?

THE WITNESS: Yes, I can.

MR. SAYLER: Excuse me, Commissioner. Would you like us to pass out the PPA?

COMMISSIONER SKOP: Yes, that would be helpful.

MR. SAYLER: One moment.

THE WITNESS: If it's okay with you, Commissioner Skop, I'd like to speak in general terms for a minute and then I can point you to some specific sections within the PPA.

COMMISSIONER SKOP: Okay.

THE WITNESS: In general terms, without revealing the confidential aspects of the PPA, if the fuel price comes in below the target price that we have laid out within the PPA, there is a gain sharing aspect between GRU and GREC, LLC, and that's on the order of

about 15 percent that GREC, LLC, will save.

Conversely, if the fuel price, the actual fuel price comes in above the target level, we will actually be on the hook, you know, per se, for 15 percent of the overage. And so that is a cost that we have built into the PPA.

The specific sections that I'll refer you to will be within Schedule 1, which is towards the back of the PPA. Under the definition section there are two definitions that I will point you to. The first would be the base fuel charge, and you'll see a conversion rate there in a tons per megawatt hour number.

COMMISSIONER SKOP: Okay.

THE WITNESS: And then I will point you a few pages later underneath the fuel price adjustor definition, and you will see another conversion factor there. And that's a lower number. And what that difference reflects is that that incorporates the gain and loss sharing that I just talked about in general terms.

COMMISSIONER SKOP: Okay. And just one second. I need to see if another term is defined there.

THE WITNESS: Sure.

COMMISSIONER SKOP: Okay. Thank you.

THE WITNESS: Okay.

COMMISSIONER EDGAR: Mr. Wright.

MR. WRIGHT: Thank you, Madam Chairman. That was all the redirect that I had.

COMMISSIONER EDGAR: Exhibits.

MR. WRIGHT: I believe Exhibit 16, Madam Chairman, I would move admission into the record.

COMMISSIONER EDGAR: Yes, sir, Exhibit 16 will be moved into the record at this time.

(Exhibit Number 16 admitted into the record.)

CHAIRMAN CARTER: The witness is excused. Thank you very much.

THE WITNESS: Thank you.

MR. WRIGHT: Madam Chairman.

CHAIRMAN CARTER: Mr. Wright.

MR. WRIGHT: We have one witness left. We have been going for about --

COMMISSIONER EDGAR: You are reading my mind.

MR. WRIGHT: I'm so glad.

COMMISSIONER EDGAR: I was going to say why don't we take a ten-minute stretch and then we will call the last and final witness. So we are on break until 4:00 o'clock.

(Recess.)

COMMISSIONER EDGAR: If we could gather again. After a short break we are back on the record.

Mr. Wright, I believe it is time for you to call your next witness.

MR. WRIGHT: Thank you, Madam Chairman. GRU and GREC, LLC, call Mr. Bradley Kushner.

BRADLEY KUSHNER

was called as a witness on behalf of GRU and GREC, LLC, and having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. WRIGHT:

Q. Good afternoon, Mr. Kushner.

A. Good afternoon.

Q. Would you please state your name and address for the record?

A. Yes. My name is Bradley Kushner, K-U-S-H-N-E-R. Business address, 11401 Lamar Avenue, Overland Park, Kansas 66211.

Q. Thank you. And you previously took the oath of witnesses when all the other witnesses were sworn, did you not?

A. Yes, I did.

Q. Thank you.

Are you the same Bradley Kushner who prepared and caused to be filed in this proceeding prefiled direct testimony consisting of 14 pages?

A. That's correct.

Q. Do you have any changes or corrections to make to this testimony?

A. No, I don't.

Q. Thank you. If I were to ask you the same questions contained in your prefiled direct testimony today, would your answers be the same?

A. Yes, they would.

Q. And do you adopt this as your sworn testimony to the Florida Public Service Commission in this proceeding?

A. Yes, I do.

Q. Thank you.

MR. WRIGHT: With that, Madam Chairman, I would ask that Mr. Kushner's prefiled direct testimony be entered into the record as though read.

COMMISSIONER EDGAR: The prefiled direct testimony of the witness will be entered into the record as though read.

COMMISSIONER KLEMENT: Thank you.

BY MR. WRIGHT:

Q. Mr. Kushner, did you also prepare and cause to be filed in this proceeding certain exhibits consisting of six exhibits denominated in your filing as BEK-1 through BEK-6?

A. Yes, I did.

MR. WRIGHT: Before I continue, Madam Chair, I would note that these have been marked for identification on the Comprehensive Exhibit List as Exhibits 17 through 22.

COMMISSIONER EDGAR: So noted. Thank you.

BY MR. WRIGHT:

Q. Do you have any changes or corrections to those exhibits, Mr. Kushner?

A. No, I don't.

Q. Could you please enumerate the sections of the need for power application that you are sponsoring?

A. I sponsored Section 7, 10, 11, and 12 of the need for power application, all of which were prepared either by me or under my direct supervision.

Q. Thank you. Were there any changes or corrections to those sections of the need for power application?

A. No, there are not.

Q. Thank you.

MR. WRIGHT: And I would note again for the record that has already been admitted pursuant to stipulation between us and staff.

CHAIRMAN CARTER: Thank you.

MR. WRIGHT: Thank you.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY OF BRADLEY E. KUSHNER

ON BEHALF OF

GAINESVILLE REGIONAL UTILITIES AND

GAINESVILLE RENEWABLE ENERGY CENTER, LLC

DOCKET NO. _____

SEPTEMBER 18, 2009

Q. Please state your name and business address.

A. My name is Bradley E. Kushner. My business mailing address is 11401 Lamar Avenue, Overland Park, Kansas 66211.

Q. By whom are you employed and in what capacity?

A. I am employed by Black & Veatch Corporation where I am currently a Manager.

Q. Please describe your responsibilities in that position.

A. I am responsible for the management of various projects for utility and non-utility clients. These projects include production cost modeling associated with power system expansion planning, feasibility studies, and demand-side management (DSM) evaluations. I also have involvement in the issuance of requests for proposals (RFPs) and evaluation of proposals received in response to RFPs.

Q. Please describe Black & Veatch.

A. Black & Veatch Corporation has provided comprehensive engineering, consulting, and management services to utility, industrial, and governmental clients since 1915. Black & Veatch specializes in engineering, consulting, and construction associated with utility services including electric, gas, water, wastewater, telecommunications, and waste disposal. Service engagements consist principally of investigations and reports, design and construction, feasibility analyses, rate and financial reports, appraisals, reports on operations, management studies, and general consulting services. Present engagements include work throughout the United States and numerous foreign countries.

Q. Please state your educational background and professional experience.

A. I received my Bachelors of Science in Mechanical Engineering from the University of Missouri – Columbia in 2000. I have more than 9 years of experience in the engineering and consulting industry. I have experience in the development of Need for Power Applications, integrated resource plans, Ten Year Site Plans, demand-side management (DSM) plans, and other capacity planning studies for clients throughout the United States. Utilities in Florida besides Gainesville Regional Utilities (GRU) for which I have worked include Florida Municipal Power Agency, JEA, Kissimmee Utility Authority, Orlando Utilities Commission, Lakeland Electric, Reedy Creek Improvement District, Tampa Electric Company, and the City of Tallahassee. I have performed production cost modeling and economic analysis, and otherwise participated in five previous Need for Power Applications that have been filed on behalf of

Florida utilities and approved by the Florida Public Service Commission (Commission). I have also testified before the Commission in previous Need for Power and other Commission proceedings.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to discuss the fuel and carbon dioxide (CO_2) emissions allowance price forecasts and supply-side alternatives used in the economic analysis of the proposed Gainesville Renewable Energy Center (GREC) biomass facility. I will also discuss the methodology utilized in the economic evaluations, as well as the results of the economic evaluations that were performed.

Q. Have you prepared any exhibits to your testimony?

A. Yes. I am sponsoring the following exhibits:

- Exhibit No. __[BEK-1], which is a copy of my resume;
- Confidential Exhibit No. __[BEK-2], which summarizes the economics of the GRU power purchase agreement (PPA) with GREC LLC compared to supply-side alternatives. Table 2 of this exhibit is identical to Table 12-1 of the GREC Need for Power Application, Exhibit No. __ [GREC-1].
- Confidential Exhibit No. __ [BEK-3], which summarizes the economics of the GRU PPA with GREC LLC compared to supply-side alternatives at higher capacity factors than represented in Confidential Exhibit No. __ [BEK-2].

- Confidential Exhibit No. __ [BEK-4], which compares the economics of the GRU PPA with GREC LLC to supply-side alternatives across a range of capacity factors.
- Confidential Exhibit No. __ [BEK-5], which summarizes the economics of the GRU PPA with GREC LLC compared to supply-side alternatives over a shorter evaluation period than represented in Confidential Exhibit No. __ [BEK-2].
- Confidential Exhibit No. __ [BEK-6], which presents the results of all of the economic evaluations represented in Confidential Exhibit No. __ [BEK-2] through Confidential Exhibit No. __ [BEK-5].

Q. Are you sponsoring any sections of Exhibit No. __ [GREC-1], the Gainesville Renewable Energy Center Need for Power Application?

A. Yes. I am sponsoring Sections 7.0, 10.0, 11.0, and 12.0, all of which were prepared by me or under my direct supervision.

Q. Please describe the basis for the fuel price projections used in the GREC Need for Power Application, Exhibit No. __ [GREC-1].

A. The fuel price projections for natural gas and coal used for the economic evaluations presented in Exhibit No. __ [GREC-1] were based on those presented in the April 2009 release of the US Energy Information Administration's (EIA) Annual Energy Outlook 2009 (AEO2009). The April 2009 release of the AEO2009 was developed by the EIA as an update to its

March 2009 Reference Case to reflect provisions of the American Recovery and Reinvestment Act (ARRA) as well as other changes to the economic outlook.

The AEO2009 presents projections of energy supply, demand, and prices through the year 2030. The projections presented within the AEO2009 are based on results from the EIA's National Energy Modeling System (NEMS). NEMS is a computer-based, energy-economy modeling system of US energy markets and projects the production, imports, conversion, consumption, and prices of energy, subject to a variety of assumptions related to macroeconomic and financial factors, world energy markets, resource availability and costs, behavioral and technological choice criteria, technology characteristics, and demographics.

Q. How are state and federal legislation and regulations reflected in AEO2009?

A. Analyses developed by the EIA are required to be policy neutral. Therefore, the projections in the AEO2009 are based on federal and state laws and regulations in effect as of November 2008, with the exception of reflecting the provisions of ARRA discussed previously. As stated in the AEO2009, the potential impacts of pending or proposed legislation, regulations, and standards – and sections of existing legislation that require implementing regulations or funds that have not been appropriated – are not reflected in the projections.

Q. Does AEO2009 provide projections of fuel prices for fuel delivered to the Florida region?

A. Yes. The April 2009 version of the AEO2009 Reference Case includes fuel price projections for delivered fuel to numerous geographic areas throughout the US. The natural gas and coal price projections used in the economic evaluations presented in Exhibit No. __ [GREC-1] were based on AEO2009 price projections for natural gas and coal delivered to the Florida Reliability Coordinating Council (FRCC).

The Reference Case fuel price projections considered throughout Exhibit No. __ [GREC-1] reflect the FRCC-specific fuel price projections for use in the electric power sector.

Q. Were any adjustments made to the AEO2009 FRCC-specific Reference Case fuel price projections?

A. Yes. The AEO2009 fuel price projections were developed in real 2007 dollars. For purposes of the economic evaluations presented in Exhibit No. __[GREC-1], these projections were converted to nominal dollars using the general inflation rate of 2.5 percent discussed in the testimony of Mr. Ed Regan.

Q. Why were the FRCC-specific natural gas price projections used in your analysis?

A. The FRCC-specific natural gas price projections were selected for use because they are consistent with the overall assumptions used throughout the AEO2009. Analysis of the AEO2009 projections of prices for natural gas delivered to electric utilities compared to the AEO2009 average wellhead natural gas price

projections indicates that the difference between the two sets of projections is in line with GRU's observed historical transportation costs. Differences between the transportation costs embedded in the FRCC-specific natural gas price projections and those that may actually be realized by GRU are easily captured by the fuel price sensitivities performed as part of my analyses.

Q. Did the economic analyses consider the costs associated with CO_2 emissions allowances?

A. Yes. Several cases considered in the economic analyses reflected hypothetical sensitivity evaluations in which emissions of CO_2 would be regulated in the US.

Q. How were the emissions prices for CO_2 derived, given that CO_2 emissions are not currently regulated?

A. Although CO_2 emissions are not currently regulated, the EIA developed an analysis entitled *Energy Market and Economic Impacts of H.R. 2454, the American Clean Energy and Security Act of 2009.* The EIA's analysis of H.R. 2454 (which EIA refers to as ACESA [American Clean Energy and Security Act]) includes 11 different cases related to the proposed H.R. 2454. Sensitivity evaluations presented in the GREC Need for Power Application reflect two of these 11 cases – the *ACESA Basic Case* and the *ACESA No International/Limited Case.* In general, the CO_2 emissions allowance prices and natural gas prices are higher in the ACESA No International/Limited Case than in the ACESA Basic Case.

Q. What supply-side alternatives was GRU's PPA with GREC LLC compared to?

A. Supply side alternatives included the following:

- General Electric (GE) LMS100 Simple Cycle
- GE 1x1 7EA Combined Cycle
- 125 MW (net) Pulverized Coal
- 125 MW (net) Pulverized Coal with Carbon Capture and Sequestration (CCS)

Q. Why were these supply-side alternatives selected for comparison to the GREC LLC PPA?

A. The supply-side alternatives were selected as they represent alternatives of similar size to the GREC LLC PPA, and encompass generating alternatives that are designed for peaking, intermediate, and baseload operation.

Q. Why were two pulverized coal alternatives considered?

A. Currently, it is uncertain whether a new coal unit of any type could be permitted in Florida, and certainly, recent experience has indicated that new coal units cannot be permitted in Florida. In spite of this uncertainty, my analyses included a pulverized coal unit for purposes of evaluating its cost compared to the GREC LLC PPA.

Because of the uncertainty relating to permitting requirements, two versions of the pulverized coal unit were considered. The first is the 125 MW pulverized

coal unit with emissions controls to reduce the emission of sulfur dioxide (SO_2), nitrogen oxides (NO_x), mercury (Hg), and particulates to the lowest reasonable levels. The second version is the same 125 MW coal unit with CCS. It should be noted that the addition of CCS reduces the net output from 125 MW to 94 MW, while increasing the net plant heat rate of the units by approximately 30 percent.

Q. How were the economic analyses conducted?

A. The economics of GRU's PPA with GREC LLC were compared to the cost of the supply-side alternatives using a levelized cost of energy (LCOE) approach. The LCOE provides for a calculation of the all-in (capital, fixed and variable operating and maintenance [O&M], and fuel costs) levelized cents/kWh cost of alternatives based on assumed capacity factors and the cost and performance characteristics of the alternatives. The LCOE analyses of the GREC LLC PPA assume that the GREC project receives the Renewable Energy Grants as discussed in the testimony of Mr. Edward Regan.

Q. What capacity factors were assumed in your analyses?

A. The simple cycle LMS100 was assumed to operate as a peaking unit at a 10 percent capacity factor, while the 1x1 7EA combined cycle was assumed to operate as an intermediate unit at a 65 percent capacity factor. The pulverized coal alternatives were assumed to operate as baseload units at an 85 percent capacity factor. The GREC LLC PPA was modeled as operating at its guaranteed annual availability of 90 percent.

Q. How many years were used in the LCOE calculations?

A. All alternatives were evaluated over the term 2014 through 2043 period, which is consistent with the 30 year term of GRU's PPA with GREC LLC.

Q. Why were levelized costs calculated?

A. The process of levelization produces a cents/kWh cost for each alternative that has the same present value as the stream of variable, year-by-year costs. Alternatives can, therefore, be compared to one another based on the levelized costs.

Q. Please describe the cases evaluated in the GREC Need for Power Application, Exhibit No. __ [GREC-1].

A. Seven distinct cases were considered in the economic evaluations presented in the GREC Need for Power Application (Exhibit No. __ [GREC-1]). The seven cases are described as follows:

- The *No CO_2* case considers the reference case fuel price projections as well as the reference case generating unit alternative cost and performance estimates.
- The *No CO_2 – High Fuel Price* case considers high fuel price projections summarized as well as the reference case generating unit alternative cost and performance estimates.

- The *No CO_2 – Low Fuel Price* case considers low fuel price projections as well as the reference case generating unit alternative cost and performance estimates.
- The *No CO_2 – High Capital Cost* case considers the reference case fuel price projections as well as a 20 percent increase to the reference case generating unit alternative capital cost estimates.
- The *No CO_2 – Low Capital Cost* case considers the reference case fuel price projections as well a 20 percent decrease to the reference case generating unit alternative capital cost estimates.
- The *HR 2454 Basic CO_2* case considers the CO_2 emissions allowance and fuel price projections corresponding to the EIA's analysis of HR 2454 for the *Basic* case as well as the reference case generating unit alternative cost and performance estimates.
- The *HR 2454 High CO_2* case considers the CO_2 emissions allowance and fuel price projections corresponding to the EIA's analysis of HR 2454 for the *Limited Technology/No International Offsets* case as well as the reference case generating unit alternative cost and performance estimates.

Q. What were the results of the economic analysis?

A. The LCOE of the GREC LLC PPA was compared to the LCOE of the four supply-side alternatives for each of the seven cases discussed previously in my testimony. Overall, the LCOE of the GREC LLC PPA was compared to a total of 28 combinations of cases and alternatives (seven cases times four supply-side

alternatives equals 28 comparisons). The GREC LLC PPA is lower in cost than the natural gas and coal alternatives for 23 of the 28 comparisons.

The LCOE of the GREC LLC PPA is lower than all of the natural gas cases. The LCOE of the GREC LLC PPA is higher than that of the coal alternative without CCS only for cases that do not consider regulation of CO_2 emissions. As discussed previously, there is uncertainty regarding whether a new coal unit of any type could be permitted in the State of Florida. The LCOE of the GREC LLC PPA is lower than that of the coal alternative including CCS for all cases considered, and is also lower in cost than the coal alternative that does not include CCS for cases in which CO_2 emissions are regulated.

The table presented in Confidential Exhibit No. __ [BEK-2] summarizes the results of the 30 year LCOE analyses using the capacity factors for the various alternatives discussed previously in my testimony.

Q. How would the economics of the GREC LLC PPA compared to the supply-side alternatives be affected by changes to your assumptions regarding capacity factors?

A. LCOE analyses have been performed for each of the alternatives for all cases assuming a 90 percent capacity factor (the same assumption as used for the LCOE analysis of the GREC LLC PPA, which has a guaranteed annual availability of 90 percent). The results, which are summarized in Confidential

Exhibit No. __ [BEK-3], show that the GREC LLC PPA is lower in cost than the natural gas and coal alternatives for 22 of the 28 comparisons.

LCOE analyses have also been performed across a range of capacity factors for all supply-side alternatives for the No CO_2 case. Confidential Exhibit No. __ [BEK-4] presents a graph showing the LCOE of the supply-side alternatives, including the GREC LLC PPA, versus capacity factors ranging from 10 to 90 percent, in 10 percent increments. Analysis of the graph shows that the LCOE of the GREC LLC PPA is lower than all of the supply-side alternatives for all capacity factors less than 65 percent. It is only at a capacity factor above approximately 65 percent that the LCOE of the pulverized coal alternative without CCS becomes lower in cost than the GREC LLC PPA.

Q. How would the economics of the GREC LLC PPA compared to the supply-side alternatives be affected by changes to your assumptions regarding the term of your evaluation?

A. LCOE analyses have been performed for each of the alternatives and the GREC LLC PPA for all cases over the first 15 years of the evaluation period. The results, which are summarized in Confidential Exhibit No. __ [BEK-5], show that the GREC LLC PPA is lower in cost than the natural gas and coal alternatives for 18 of the 28 comparisons. The only alternatives that are lower in cost than the GREC LLC PPA over the first 15 years of the evaluation period are the cases that do not consider CO_2 regulation for the combined cycle and coal unit without CCS.

Q. For the No CO_2 Case, at what year does the GREC LLC PPA become lower in cost than the 1x1 7EA combined cycle alternative?

A. The annual cost of energy from the GREC LLC PPA becomes lower in cost than that of the 1x1 7EA combined cycle alternative beginning in 2022, or the ninth year of the analysis. The annual cost of energy from the GREC LLC PPA remains lower in cost than the 1x1 7EA combined cycle alternative for all subsequent years.

Q. How would the economics of the GREC LLC PPA compared to the supply-side alternatives be affected by the project not receiving the Renewable Energy Grants mentioned previously in your testimony?

A. The LCOE of the GREC LLC PPA (evaluated at a 90 percent capacity factor over a 30 year term) would increase by approximately 6 percent if the project does not receive the Renewable Energy Grants. The LCOE of the GREC LLC PPA remains lower in cost than the natural gas and coal alternatives for 22 of the 28 comparisons if Renewable Energy Grants are not considered (assuming the capacity factors for the simple cycle, combined cycle, and pulverized coal alternatives discussed previously and a 30 year term for the LCOE calculations).

Q. Does this conclude your testimony?

A. Yes.

BY MR. WRIGHT:

Q. And with that I would ask Mr. Kushner to summarize his testimony.

A. Thank you. My testimony demonstrates that the Gainesville Renewable Energy Center is the most cost-effective resource for GRU. My testimony describes the fuel and carbon dioxide emission allowance price projections and the supply-side alternatives used in the cost-effectiveness evaluations. I also describe the economic evaluation methodology and discuss the results of the economic analysis that were performed as part of the GREC need for power application.

The natural gas and coal price projections were developed based on those presented in the U.S. Energy Information Administration's Annual Energy Outlook 2009, which reflects provisions of the American Recovery and Reinvestment Act and takes into account unconventional supplies of natural gas, including shale gas.

The annual energy outlook includes projections of natural gas and coal prices specific to the Florida Reliability Coordinating Council region. These region-specific price projections were used as the basis of the fuel prices considered in the need for power application. The annual energy outlook is policy

neutral and as a result does not reflect potential impacts of pending or proposed legislation, such as potential future regulation of carbon dioxide. The Energy Information Administration's analysis of HR2454, commonly referred to as the Waxman-Markey Proposal was used as the basis of the carbon dioxide emissions allowance prices considered in my analyses.

The economic analyses performed for the GREC need for power application considered a natural gas-fired simple cycle combustion turbine, a natural gas-fired combined cycle, and two pulverized coal alternatives, one without carbon capture and one including carbon capture and sequestration. These alternatives were selected as to represent alternatives of similar size to the GREC project and encompassed generating alternatives that are designed for peaking, intermediate, and base load operation.

The levelized cost of energy was calculated for each supply-side alternative as well as the GREC power purchase agreement. Such an analysis provides for a calculation of the all-in levelized cost per kilowatt hour. The analyses were performed for several capital costs and alternative fuel and carbon dioxide emission allowance price projection sensitivity cases.

The GREC power purchase agreement was compared

to 28 combinations of cases and alternatives and the GREC project was found to be lower in cost in 23 of the 28 comparisons. The only comparisons in which the GREC power purchase agreement is not lower than the alternatives involved pulverized coal alternatives that did not consider regulation of carbon dioxide emissions. It is uncertain whether any coal unit, particularly a unit without carbon capture and sequestration, can be permitted in the state of Florida.

Additional sensitivity analysis related to assumed capacity factors and evaluation periods were performed. As with the evaluations I just summarized, the GREC power purchase agreement is lower in cost in 42 out of 56 of those additional cases.

And that concludes my summary.

MR. WRIGHT: Thank you, Madam Chairman.

Thank you, Mr. Kushner. Mr. Kushner is available for cross-examination.

COMMISSIONER EDGAR: Are there questions from the bench?

Commissioner Skop.

COMMISSIONER SKOP: Thank you, Madam Chair. Good afternoon, Mr. Kushner.

THE WITNESS: Good afternoon.

COMMISSIONER SKOP: Just two or three quick

questions. You mentioned the fuel price assumptions that were used in the various scenarios that were modeled. With respect to the natural gas price assumption, was that a low, midpoint, or a high natural gas forecast that was used in your analysis?

THE WITNESS: All three were considered in the analysis. The Energy Information Administration's annual energy outlook presents a reference case or what might be considered a base case based on the nomenclature we have used before, a low case and a high price case as well as several other sensitivity cases.

COMMISSIONER SKOP: Okay. There's some data shown on the yellow handout which you may or may not have in front of you, but it does list some natural gas forecast prices from 2014 to 2043, and I was wondering what that price might be indicative of.

THE WITNESS: Okay.

COMMISSIONER EDGAR: Do you need another copy, Mr. Wright?

MR. WRIGHT: I'm just trying to confirm to my own satisfaction that we are speaking of Exhibit 24 or something else.

COMMISSIONER EDGAR: I believe it is Exhibit 24.

Commissioner Skop, is that correct?

COMMISSIONER SKOP: I believe so, yes.

MR. WRIGHT: Thank you.

THE WITNESS: Commissioner Skop, on Page 8 of 8 of the handout you referred to --

COMMISSIONER SKOP: Yes, sir.

THE WITNESS: The natural gas and coal prices are for the referenced case.

COMMISSIONER SKOP: Okay. So that would be more of a midpoint?

THE WITNESS: Yes, sir.

COMMISSIONER SKOP: Okay. All right. Thank you. The second question, there may be an explanation on this also, but in the confidential contract -- and I don't know if you have a copy of that with you?

THE WITNESS: Yes, I do. Thank you.

COMMISSIONER SKOP: And back in the definition section, which I think it might be section --

MR. SAYLER: Section 1.

COMMISSIONER SKOP: Section 1. I'm trying to get back to the page. Here it is. Section 1 on Page -- I will look to Commissioner Edgar to help me out, IX in Roman numeral, so --

CHAIRMAN CARTER: That would be nine.

COMMISSIONER SKOP: Okay. Yes. On Page 9 there's a definition for target fuel price with a

confidential number. Do you see that?

THE WITNESS: Yes, sir.

COMMISSIONER SKOP: Okay.

Now, on the other exhibit, the second confidential package, which is marked as Bates Number 10127, Part 2 of 2. It's a thicker packet that has the levelized cost of energy for the GREC plant.

THE WITNESS: Yes.

COMMISSIONER SKOP: Do you see that?

THE WITNESS: Yes.

COMMISSIONER SKOP: Okay. Do you see the column which is the fourth column over that's fuel rate in dollars per megawatt hour?

THE WITNESS: Yes, I do.

COMMISSIONER SKOP: Okay. Without revealing confidential data, is that the target number multiplied by a certain multiplier or is that just a projection of the fuel cost?

THE WITNESS: That cost per megawatt hour was based on just using the target fuel price. I think Mr. Levine previously testified to some of the adjustment provisions, if you will, of the contract, and we didn't adjust that target fuel price either up or down.

COMMISSIONER SKOP: Okay. So basically that is the target multiplied by the multiplier at least for

the first year?

THE WITNESS: Yes, sir.

COMMISSIONER SKOP: All right. Great. Thank you. And then, finally, you spoke to the analysis that was performed with the LCOE, or levelized cost of electricity. Why is it important to do that type of study, levelized cost analysis?

THE WITNESS: The levelized cost analysis that I described earlier allows for a direct comparison of the economics of the GREC power purchase agreement against the similarly sized conventional alternatives. And in this particular need for power application it is viewed as kind of a supplement to the extensive multiyear planning process that GRU undertook that eventually concluded with the City Commission's decision to pursue the purchased power agreement with GREC.

COMMISSIONER SKOP: Okay. So doing that levelized cost study analysis allows you to go apples-to-apples to any given alternative, whether it be a different technology type, or if you were evaluating two biomass plants with different contract terms, you would still be able to have an objective comparison as to how each project compared by using that levelized cost analysis?

THE WITNESS: Yes, sir, that's correct.

COMMISSIONER SKOP: All right. Thank you.

COMMISSIONER EDGAR: Questions from staff.

MR. SAYLER: Thank you, Madam Chairman. Staff has a few questions for Mr. Kushner.

CROSS EXAMINATION

BY MR. SAYLER:

Q. Good afternoon, Mr. Kushner.

A. Good afternoon.

Q. My name is Eric Sayler. We have met previously on prior occasions. If you will turn to your Exhibit BEK-2 from the confidential exhibit. It's the thin one.

A. Yes.

Q. According to the analysis in that exhibit, you did a levelized cost of energy comparing GREC -- the GREC facility with a simple cycle unit, a combined cycle unit, a pulverized coal with no carbon capture and sequestration, and pulverized coal with carbon capture and sequestration, is that correct?

A. Yes, that is correct.

Q. All right. And when it comes to coal plants, are you familiar with Florida's recent history involving planning of coal-fired units?

A. Yes, I am familiar with it.

Q. And are you familiar with any utility

currently planning to construct a new coal plant in Florida within the next ten years?

A. My familiarity with this particular coal unit is somewhat limited, but I believe Seminole Electric Cooperative is moving forward with plans. I don't know if they are on track or the current status of it, but that was the only one that I was aware of within the past several years that had received Commission approval to move forward.

Q. Okay. So besides Seminole, any other coal plant that has come before the Commission has either been withdrawn or turned down, is that correct?

A. Yes, I'd agree with that.

Q. All right. Would you agree, generally, that it is difficult to license and/or construct a new coal-fired facility in Florida -- it would be difficult to construct a new coal-fired facility in Florida by 2013?

A. Yes, I think that's an accurate statement.

Q. All right. And would you generally agree that natural fired units are considered to be easier to license and construct in Florida than a coal unit?

A. In general, compared to a coal unit, yes, that's a true statement.

Q. All right. And according to your exhibit

assuming no carbon legislation, only the pulverized coal plant without carbon capture and sequestration has a lower cost, or LCOE, than the GREC facility, correct?

A. That is correct.

Q. All right. And given the likelihood of some form of carbon regulation on the event horizon, the primary alternatives to analyze in your LCOE was those two gas-fired units, correct?

A. Yes. And we also looked at the pulverized coal unit that included the carbon capture and sequestration technology, which may, in theory, help facilitate licensing of a coal unit. But, in general, the gas alternatives are more likely to move forward.

Q. And it is your testimony and according to your exhibit that the GREC facility has a lower LCOE than either of the natural gas units, is that correct?

A. That is correct.

MR. SAYLER: All right. Thank you. That is the conclusion of staff's testimony.

COMMISSIONER EDGAR: Anything further from the bench?

Mr. Wright.

MR. WRIGHT: No redirect, Madam Chairman.

CHAIRMAN CARTER: Exhibits?

MR. WRIGHT: Yes, ma'am; 17 through 22, move

those into evidence.

COMMISSIONER EDGAR: Exhibits 17, 18, 19, 20, 21, and 22 will be entered into the record at this time.

(Exhibit Numbers 17 through 22 admitted into the record.)

COMMISSIONER EDGAR: The witness is excused. Thank you very much. Okay. We had talked about one additional exhibit.

MR. WRIGHT: Yes, Madam Chairman. We had filed on Monday of this week an errata to the testimonies of Mr. Regan, Mr. Levine, and I think Mr. Kushner. And we had agreed earlier in the process that we would just identify these as an exhibit at the end of today, where we happily are, and move them in as one. And I would ask that those be marked as Exhibit 32 and received into evidence. We could call it composite errata.

COMMISSIONER EDGAR: Composite errata to Exhibit 28?

MR. WRIGHT: Yes.

COMMISSIONER EDGAR: 27. It's 27. That was my misstatement.

MR. WRIGHT: Well, it is 27. I was actually going to go ahead and just ask that we include the testimony and exhibit errata as well as the need for

power application errata.

COMMISSIONER EDGAR: Okay. I'm with you now.

MR. WRIGHT: So we could say composite errata to Exhibit 27 and testimony.

COMMISSIONER EDGAR: That works for me.

MR. WRIGHT: Me, too. Thank you.

(Exhibit Number 27 marked for identification and admitted into the record.)

COMMISSIONER EDGAR: Mr. Sayler, are you on the same page with us?

MR. SAYLER: I believe so. The one question staff had with regard to the need for power application, if it was possible to get replacement sheets for the application itself that say revised, because then it would just make it easier and clearer for the record. If it needs to be submitted as a late-filed exhibit, then staff would be fine for that.

COMMISSIONER EDGAR: Mr. Wright.

MR. WRIGHT: Madam Chairman, since we know what the content is, I don't think there is any need for them to -- if you know specifically what the content is, I don't think there is any need for them to be marked or filed as a late-filed exhibit. We will commit to file those real soon.

COMMISSIONER EDGAR: I understand. That's

fine.

Thank you, Mr. Sayler.

Thank you, Mr. Wright, that will work.

MR. WRIGHT: Thank you, Madam Chairman.

COMMISSIONER EDGAR: So we will have an Exhibit 32, which will be supplied on Monday by Mr. Wright and his clients, and that is the errata to Exhibits 28 and 27 -- excuse me, 27 and testimony.

(Exhibit Number 32 marked for identification and admitted into the record.)

COMMISSIONER EDGAR: Okay. Any other matters to take up at this time?

MR. SAYLER: No, Madam Chairman, none that staff is aware of. I do note that there are some critical dates in this proceeding. Would you like me to share those for the record?

COMMISSIONER EDGAR: Just a moment. Mr. Wright, any other matters before we go over dates?

MR. WRIGHT: Just a minor insecurity on my part, Madam Chairman. I just want to clarify for the record that Exhibit 27 has been admitted into evidence.

COMMISSIONER EDGAR: It has.

MR. WRIGHT: Thank you very much.

COMMISSIONER EDGAR: Okay. Mr. Sayler, critical dates.

MR. SAYLER: All right. The remaining critical dates are the hearing transcript is due December 23rd. Briefs are due January 5th. Staff's recommendation will be filed January 28th. This will come to agenda on February 9th, and the order should be issued on or before March 1st of 2010.

COMMISSIONER EDGAR: Any questions or concerns about the dates? No? Okay. Commissioners, anything further before we adjourn? Hearing none. Anybody else? No.

All right. Thank you all. We are adjourned.

MR. WRIGHT: Thank you.

(The hearing adjourned at 4:23 p.m.)

STATE OF FLORIDA)

: CERTIFICATE OF REPORTERS

COUNTY OF LEON)

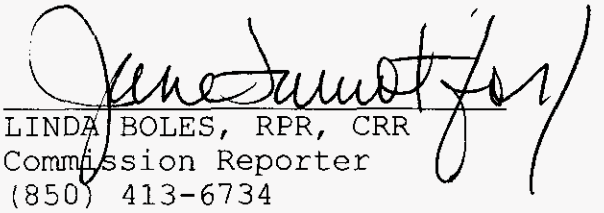
WE, JANE FAUROT, RPR, and LINDA BOLES, RPR, CRR, Official Commission Reporters, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that we stenographically reported the said proceedings; that the same has been transcribed under our direct supervision; and that this transcript constitutes a true transcription of our notes of said proceedings.

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

DATED THIS 23rd DAY OF DECEMBER, 2009.

JANE FAUROT, RPR
Commission Reporter
(850) 413-6732



LINDA BOLES, RPR, CRR
Commission Reporter
(850) 413-6734