BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Joint Petition to Determine Need For the Gainesville Renewable Energy Center in Alachua County by Gainesville Regional Utilities and Gainesville Renewable Energy Center, LLC	)	DOCKET No. 090451-EM
	)	FILED: DECEMBER 21, 2009

NOTICE OF FILING REVISED PAGES OF NEED FOR POWER APPLICATION AND *REVISED TESTIMONY OF EDWARD J. REGAN AND JOSHUA H. LEVINE*, BY GAINESVILLE REGIONAL UTILITIES AND GAINESVILLE RENEWABLE ENERGY CENTER, LLC

Gainesville Regional Utilities ("GRU") and Gainesville Renewable Energy Center, LLC ("GREC LLC"), pursuant to instructions from the Commission at the conclusion of the hearing in this docket on December 16, 2009, hereby file revised pages 9-1 through 9-6, 15-2, 16-1, and 17-1 of the Need for Power Application received into evidence as Exhibit No. 27, and also file the revised testimonies of Mr. Edward J. Regan and Mr. Joshua H. Levine in this case.

Respectfully submitted this 21st day of December, 2009.

Roy C. Young
Robert Scheffel Wright
Young van Assenderp, P.A.
225 South Adams Street – Suite 200
Tallahassee, Florida 32301
Telephone (850) 222-7206
Facsimile (850) 561-6834

Attorneys for Petitioners

COM ___
APA ___
ECR ___
GCL 2
RAD 2
SSC ___
ADM ___
OPC ___
CLK 2

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished electronically and by United States mail this 21st day of December, 2009, to the following:

Martha Carter Brown
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850
mbrown@PSC.STATE.FL.US

Attorney

9.0 Project Overview

This section discusses the proposed GREC biomass facility and provides information related to the project developers, a description of the facilities, the PPA between GRU and GREC LLC, the supply of fuel to the GREC, resale opportunities for power from the GREC facility that may be available and beneficial to GRU, and the schedule for development and completion of the GREC facility.

It should be noted that elements of the PPA between GRU and GREC LLC are confidential. As such, the information presented throughout this Application is limited to information that is not confidential.

9.1 Project Developers

The GREC facility will be designed, constructed, owned, and operated by GREC LLC, a subsidiary of American Renewables, LLC, 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. American Renewables is developing another similar facility in Hamilton County, Florida. American Renewables is jointly owned by affiliates of BayCorp, EMI and Tyr. The entities are described as follows.

- BayCorp is a merchant energy company that owns power assets, as well as natural gas and oil production and development assets. BayCorp owns and operates a hydroelectric generation facility and is developing additional generation in Vermont; through its subsidiary, Great Bay Power Marketing, Inc., BayCorp supplies wholesale power in the New England power market; and through its subsidiary BayCorp Resources, BayCorp owns and operates interests in oil and natural gas development and production projects located throughout Texas.
- EMI is a privately held energy company with more than 30 years of experience in energy conservation and energy development. In 1986, EMI developed, financed, and constructed Alexandria Power Associates, a 15 MW biomass-fired electric generating facility in Alexandria, New Hampshire. Following the Alexandria project, EMI developed six natural gas-fired electric generation projects totaling more than 860 MW of capacity and including the first true independent and merchant power projects in New England. EMI is also currently developing the Cape Wind Project, a 468 MW offshore wind project to be located in Nantucket Sound off the southern coast of Cape Cod, Massachusetts.

- Owned by ITOCHU Corporation, a $52 billion international trading conglomerate and its US based subsidiary, ITOCHU International, Inc., Tyr focuses on acquiring and owning equity interests in North American independent power assets and providing asset management services to facilities in which it is an owner. Tyr's current portfolio includes interests in CalPeak Power (California), Chesapeake Commonwealth Energy (Virginia), and Fox Energy (Wisconsin). Worldwide, ITOCHU owns interests in independent power facilities in Saudi Arabia, Indonesia and Japan in addition to the United States. Tyr's sister company, North American Energy Services, also a subsidiary of ITOCHU International, Inc., is the industry's largest independent, third-party provider of power plant O&M services, providing services to almost 300 MW of biomass fueled power plants across the US.

The GREC's project developers have a long and successful track record of energy and power asset development and operation, as well as a robust development pipeline looking forward. Collectively, the project developers have acquired or developed more than $7.6 billion of energy and infrastructure assets, and have a pipeline or deployment budget of $2.5 billion for US renewable power plants over the next 5 years.

9.2 Description of Facilities

The GREC facility will be located within the confines of GRU's existing Deerhaven Power Plant site on property leased from the City of Gainesville (d/b/a GRU). GRU will have title to 100 percent of the plant's output, including all environmental attributes (such as renewable energy credits, carbon offsets, etc.).

The facility will be a new nominal rated 100 MW net (116 MW gross) biomass-fired electric generating facility, consisting of a biomass fuel handling system, a biomass-fired boiler, a condensing steam turbine generator with evaporative cooling towers and auxiliary support equipment. The facility will also utilize a zero liquid discharge (ZLD) system to eliminate industrial wastewater discharges in accordance with the site's current restrictions pursuant to its current certification. The facility will be designed in accordance with standards normally used in the utility industry so that the facility will, with standard O&M practices, be designed to provide full service over its 42 year design life.

The facility will utilize a fluidized bed boiler to produce superheated steam. The boiler will be equipped with a baghouse to control particulate matter. An aqueous ammonia injection selective catalytic reduction (SCR) system will be provided for NO_x control. The slightly more expensive SCR system was considered for purposes of

evaluating the economics of the GREC LLC PPA throughout this Application. Superheated steam from the boiler will be admitted to a single steam turbine with four extractions for feedwater 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 PEF and FP&L. When the steam turbine generator is off-line, station service power will be obtained by backfeeding from GRU's system.

A unique feature of the agreement between GREC LLC and GRU is that it is not a "must take" unit. The unit can be turned down or taken off-line to meet operational or economic requirements. If, however, the unit is dispatched at less than available capacity, the fixed non-fuel energy charges would still be invoiced based on the energy that was available, but not called upon. Therefore, the variable cost for dispatch is the fuel cost and variable operations and maintenance (O&M) charge per MWh. A substantial portion of GRU's agreement with GREC LLC is dedicated to empirically establishing the available capacity of the unit for each season and performance incentives for maintaining that availability. The overall guaranteed annual availability is 95 percent in the four summer months and 90 percent on an annual basis.

9.3 Power Purchase Agreement

GRU has entered into a 30 year contract (from the date of completion) to purchase 100 percent of the output of the GREC biomass facility. GRU has been careful to structure the agreement with GREC LLC to ensure that it would not be viewed as a long-term financial liability by bond rating agencies, with the resulting requirements for debt service coverage, etc. Preliminary reviews with Moody's and Standard & Poor's indicate that they will view the agreement as only having limited financial liability related to performance obligation bonds, for example, and as such will not require substantial debt service coverage. The facility will be subject to Alachua County's tangible property taxes. Table 9-1 summarizes the billing elements in the PPA. The facility must be in operation before January 1, 2014 to receive the most favorable benefits of the ARRA, which may commonly be referred to as the HR 1 Stimulus Package, for open-loop biomass energy projects. There is no associated long-term liability of production tax credits ending after 10 years under this scenario.

Table 9-1
Billing Elements of the Power Purchase Agreement Between GRU and GREC LLC

Billing Element	Description	Method of Escalation
Non-Fuel Energy Charges	Paid only for available energy. There will be no fixed capacity charges associated with the generating facility. This charge includes all costs except fuel and variable O&M.	Does not change, fixed 30 years
Fuel Charge	Actual cost per delivered ton times a guaranteed heat rate. A target cost is set at the beginning of each year based on the prior year's actual costs and the savings from this target are shared with GREC LLC as are any costs over the target. See the fuel cost discussion.	Market based (probably less than Consumer Price Index [CPI])
Variable O&M	Paid only for energy delivered to GRU. There is no variable O&M obligation if energy is not delivered.	CPI (beginning 2009)
Equivalent Taxes	Tangible property taxes will be a direct pass-through on an annual basis. Taxes will depend on the final valuation and assignment of costs to system components (certain items are tax-exempt). Tangible property taxes are depreciated as opposed to real property taxes, which tend to appreciate.	Depreciates over time

9.4 Fuel Handling and Supply

The primary fuels for the 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. Limited quantities of natural gas will be used for start-up fuel.

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 by truck to the GREC facility. Fuel will be transported into and out of on-site storage via a series of conveyors. The GREC will have 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.

GREC LLC has spent significant resources working with the forestry industry in north-central Florida, sometimes accompanied by GRU staff. GRU has been advised that 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. 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 (10 to 20 percent), diesel fuel (10 to 20 percent), 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 increases well below the 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. The unique aspects of the GREC related to forest stewardship are described within the strategic considerations discussed in Section 15.0 of this Application.

9.5 Power Resale

GRU is seeking to ascertain the level of interest that other utilities might have in becoming a counter party to take a share of the renewable energy output from the GREC for the initial period of operation. GRU envisions structuring an arrangement whereby the counter party(s) will share the costs borne by GRU on a pro rata basis with the addition of wheeling fees and transmission losses required for the delivery of power to the border of GRU's control area and the incidental cost of the risks associated with this wheeling. GRU will consider reselling 50 percent of the facility's output for the initial 10 years of GREC's operation.

9.6 Project Schedule

The GREC is planned for commercial operation beginning December 1, 2013. Current estimates of major milestone dates associated with development and construction of the GREC are outlined in Table 9-2.

Table 9-2
GREC Project Schedule

Activity	Finish Date
Site Activities for Permitting Support Completed	September 11, 2009
File Florida Public Service Commission Need Determination Application	September 18, 2009
Preliminary Engineering Activities Completed	October 23, 2009
File Prevention of Significant Deterioration (PSD) Application	November 30, 2009
File Site Certification Application (SCA)	November 30, 2009
PSC Need Determination Final Order	March 1, 2010
File Gainesville Site Plan Application	March 10, 2010
Gainesville Site Plan Final Approval	May 13, 2010
Site Certification Approval	December 7, 2010
Complete Project Financing	December 15, 2010
Construction Start	December 16, 2010
Initial Synchronization	September 1, 2013
Commercial Operation	December 1, 2013

Revised Table 15-1
Biomass Plant Risk Assessment[1]

Natural Gas Price Forecast	Value of Environmental Attributes	Impact on 1,000 kWh Residential Bill (/Month)	
		2014	2019
Low	$0.00/MWh	$12.78	$8.50
	$12.00/MWh	$10.56	$6.40
Base	$0.00/MWh	$10.56	$5.12
	$12.00/MWh	$8.34	$3.02
High	$0.00/MWh	$8.34	$1.75
	$12.00/MWh	$6.12	$(0.47)

[1] No adjustment for the value of avoided capacity. Value of environmental attributes includes combined REC and CO_2 offset values.

Table 15-2
Biomass Plant Risk Assessment[1]

Scenario	Increase of 1,000 kWh Residential Bill	
	2014	2019
Low Natural Gas Price	5.8%	2.5%
Base Case	4.3%	0.5%
High Natural Gas Price	2.7%	-1.6%

[1] No adjustment for the value of avoided capacity. Includes $12.00/MWh value for RECs and CO_2 offsets.

The above risk assessment assumes that GRU resells 50 percent of the GREC's output for the period 2014 through 2023. Four municipal organizations in Florida have expressed interest in purchasing this output, and GRU was involved in related discussions at the time this Application was filed.

16.0 Consequences of Delay

This section discusses the consequences of delaying commercial operation of the GREC biomass facility beyond its planned December 2013 commercial operation date. Delay of the facility would result in economic, reliability, and potential regulatory consequences.

16.1 Economic Consequences

There are a number of economic consequences associated with the delay of the GREC. The most important economic consequence of delay is that if the project is not in commercial operation by January 1, 2014, it will not be eligible to obtain the Renewable Energy Grant contained in H.R. 1 (ARRA 2009) Sec. 1603. The increase in GRU's cost of power from not obtaining the Renewable Energy Grant will be $8.10/MWh, amounting to $6.4 million per year.

In addition to the costs resulting from not obtaining the Renewable Energy Grant, the GREC PPA contains a clause to adjust the nonfuel energy charge by escalation indices to the time of construction commencement. Based on the escalation rate of 2.5 percent assumed in this Application, the cost of delay is $29.6 million per year of delay.

Another economic consequence of delay is that if the GREC is delayed, it will not be available to displace replacement power costs for GRU's Deerhaven 2 during outages.

In addition to the above direct economic consequences of delay, there are numerous indirect consequences of delay. The GREC will directly employ an estimated 44 people in the operation of the project, with an estimated payroll of $4 million per year. In addition, an estimated 400 to 500 people will be employed to obtain the fuel supply, with an estimated payroll of $18 million per year. The GREC will employ more than 400 people at peak construction, with an estimated payroll of $1.5 million per week during the peak construction period. Over the entire construction cycle, construction payroll will total approximately $48.8 million. These indirect benefits will be postponed with a delay in the construction and operation of GREC. Most of these indirect benefits will be in the Gainesville region.

17.0 Financial Analysis

The successful completion and operation of the proposed GREC biomass facility will depend on many factors, including, but not limited to, the following:

- The experience and financial capability of the project developers who will own, operate, and maintain the plant.
- The strength/quality of the PPA.
- The credit quality of the PPA counterparty.
- The experience of construction contractors and the strength/quality of the construction contracts.

The project developers intend to pursue a traditional project financing approach for the GREC, which will involve senior long-term debt and additional equity as necessary. The senior bank debt will be secured by first priority liens on substantially all of the assets and commercial agreements of the GREC, as well as a pledge of the equity in the GREC. Additional equity will flow into the project as needed from both strategic and tax-motivated equity investors.

In addition to the project developers' experience, an important aspect of the ability to finance the facility is the credit quality of the counterparty purchasing the plant's output, in this case GRU. This section discusses the experience and financial capability of both parties to this transaction.

17.1 Project Developers

The GREC facility will be designed, constructed, owned and operated by GREC LLC, a subsidiary of American Renewables, LLC, 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. American Renewables is developing another, similar facility in Hamilton County, Florida. American Renewables is jointly owned by affiliates of BayCorp, EMI, and Tyr. The entities are described as follows:

- BayCorp is a merchant energy company that owns power assets, as well as natural gas and oil production and development assets. BayCorp owns and operates a hydroelectric generation facility and is developing additional generation in Vermont; through its subsidiary, Great Bay Power Marketing, Inc., Baycorp supplies wholesale power in the New England power market; and through its subsidiary BayCorp Resources, Baycorp owns and operates interests in oil and natural gas development and production projects located throughout Texas.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REVISED DIRECT TESTIMONY OF EDWARD J. REGAN

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 Ed Regan. 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 Assistant General Manager for Strategic Planning.

Q. Please describe your responsibilities in that position.

A. I am responsible for electric, water, wastewater, and natural gas system planning including power supply planning. I am responsible for demand-side management (DSM); load and revenue forecasting; cost of service and rate design; electric system permitting and regulatory compliance; financial planning; and community, legislative, and regulatory affairs. I am also responsible for coordinating GRU's interaction with The Energy Authority

(TEA), participating on GRU's Risk Oversight Committee, and coordinating GRU's contracts for wholesale power, solar energy, and combined heat and power services.

Q. Please state your educational background and professional experience.

A. I received my Bachelor of Sciences degree in Behavioral Psychology and my Master of Environmental Sciences degree from the University of Florida. I am a registered Professional Engineer licensed in the State of Florida. I have 30 years of experience in the utility industry.

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

A. The purpose of my testimony in this proceeding is to discuss GRU's need for the Gainesville Renewable Energy Center (GREC) biomass facility. I will provide an overview and summary of the GREC Need for Power Application, Exhibit No. __ [GREC-1]. In addition to this general summary, I will discuss GRU's existing system, GRU's reliability criteria and need for capacity, the economic parameters used throughout the GREC Need for Power Application, and GRU's resource planning process. I will also discuss GRU's power purchase agreement with the GREC biomass project, GRU's DSM and supply-side efficiency activities, strategic considerations associated with GRU's decision to pursue the GREC facility, consequences of delaying the GREC facility, and that GRU has the financial resources to commit to the GREC LLC power purchase agreement (PPA).

Q. Are you sponsoring any exhibits to your testimony?

A. Yes. Exhibit No. __ [EJR-1] is a copy of my resume. Exhibit No. __ [EJR-2] summarizes GRU's existing residential and non-residential DSM programs. Exhibit No. __ [EJR-3] summarizes GRU's recent base rate and fuel adjustments.

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

A. Yes. I am sponsoring Sections 1.0, 2.0, 3.0, 5.0, 6.0, 8.1 through 8.4, 9.3, 9.5, 13.0, 15.0, 16.0, and 17.2, all of which were prepared by me or under my direct supervision.

Q. Please summarize the GREC Need for Power Application, Exhibit No. __ [GREC-1].

A. GRU and GREC LLC are co-applicants, submitting this Need for Power Application in support of the proposed GREC biomass facility to be located at GRU's existing Deerhaven site within the City of Gainesville's corporate limits in Alachua County, Florida. The GREC facility will be owned and operated by GREC LLC, a subsidiary of American Renewables, LLC. GRU will receive power from the GREC facility under a 30 year PPA with a fixed nonfuel energy charge per megawatt-hour (MWh) covering construction, debt service, and all fixed operating and maintenance (O&M) costs.

Exhibit No. __ [GREC-1] summarizes the planning process leading to the decision to pursue the GREC LLC PPA, and presents the results of a comprehensive analysis that was performed to demonstrate that the GREC LLC PPA satisfies the statutory criteria set forth in Section 403.519, Florida Statutes.

Q. Please discuss these statutory criteria.

A. Section 403.519(3), Florida Statutes, sets forth the following criteria which the Florida Public Service Commission must consider, without specifying the weight the Florida Public Service Commission should give to each criteria, in making need determinations:

- The need for electric system reliability and integrity.
- The need for adequate electricity at a reasonable cost.
- The need for fuel diversity and supply reliability.
- Whether the proposed plant is the most cost effective alternative available.
- Whether renewable energy sources and technologies, as well as conservation measures, are utilized to the extent reasonably available.
- Whether there are conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant.

Q. Please summarize how the PPA with GREC LLC satisfies these statutory criteria.

A. The proposed GREC facility is planned to begin commercial operation by December 2013. As a result of the success of GRU's DSM efforts, the addition of combined heat and power and landfill gas-to-energy projects, ongoing additions of solar photovoltaic (PV) capacity through GRU's solar feed-in tariff (FIT), and the effects of the recent economic downturn, GRU does not forecast a need for capacity to simply maintain our 15 percent reserve margin criteria until 2023. However, reserve margin is not the only criterion for the need for additional generating capacity.

The PPA with GREC LLC provides GRU with capacity that is needed to improve and maintain the reliability of GRU's system. The capacity from GREC is needed to replace capacity from GRU's lowest cost existing fossil fueled unit, Deerhaven 2, during maintenance and forced outages. Deerhaven 2 serves approximately 50 percent of GRU's system peak demand and, as an aging facility that will be 32 years old when the GREC facility goes into service in late 2013, the availability of Deerhaven 2 is expected to decrease.

The analysis of supply-side alternatives presented in the GREC Need for Power Application, Exhibit No. __ [GREC-1], demonstrates that the PPA with GREC LLC provides lower cost power than comparable natural gas alternatives over the 30 year term of the PPA. While a coal unit may provide lower cost power

when not considering costs associated with potential regulation of emissions of carbon dioxide (CO_2), when such considerations are taken into account the PPA with GREC LLC provides lower cost power than coal alternatives.

In addition to enhancing the reliability and integrity of GRU's electric system in the most cost-effective manner, the PPA with GREC LLC will diversify GRU's existing fuel mix, which is dominated by coal and therefore is potentially at risk under future CO_2 regulations, and natural gas, which is subject to volatility in price and availability and also at risk under future CO_2 regulations. The GREC facility will take advantage of multiple streams of various types of biomass fuel, which will further enhance the reliability of GRU's fuel supply.

GRU offers our customers the opportunity to participate in numerous DSM programs, and has worked with several consultants to structure a DSM portfolio that maximizes results. Combined with improvements to the efficiency of our supply-side resources and increased customer-sited renewables and distributed generation, GRU has demonstrated through previous and on-going actions that we are committed to utilizing renewable energy resources and conservation and energy efficiency measures to the extent reasonably available.

Q. Please describe GRU.

A. GRU operates a fully vertically integrated electric power production, transmission, and distribution system, which is wholly owned by the City of

Gainesville. In addition to retail electric service, GRU also provides wholesale electric service to the City of Alachua and Clay Electric Cooperative. GRU's distribution system serves our retail territory of approximately 124 square miles and approximately 93,000 residential and commercial customers in both the incorporated and unincorporated areas of our service territory. GRU also provides natural gas, water, wastewater, and telecommunications services.

GRU has generating units at two primary generating sites – Deerhaven and John R. Kelly. Each site has steam turbine and combustion turbine units, and the Kelly site also includes a combined cycle unit. GRU's existing net summer generating capacity is approximately 608 MW. GRU's existing generating units include three fossil fuel steam turbines, six simple cycle combustion turbines, one combined cycle unit, a share of Progress Energy Florida's Crystal River 3 nuclear unit, and distributed generation. GRU's main generation unit is the 222 MW coal fueled Deerhaven Unit 2 which went into service in 1981. GRU also has a generating station called the South Energy Center which provides combined heat and power services to a new Shands HealthCare cancer hospital.

Q. Does GRU utilize power purchases as part of its power supply portfolio?

A. Yes. GRU has entered into a 15 year contract to receive 3 MW of landfill gas fueled capacity at the Marion County Baseline Landfill from G2 Energy Marion, LLC. The facility began commercial operation in January 2009, and net output is expected to increase to 3.8 MW by December 2009.

GRU has a PPA with PEF for 50 MW of baseload capacity, which began January 1, 2009 and continues through December 31, 2013. An additional 25 MW of baseload capacity was contracted for January 1, 2009 through December 31, 2010, and another 25 MW of baseload capacity was contracted for March through August of 2009 and March through August of 2010. We also have a solar feed-in-tariff (FIT), under which we purchase distributed solar power.

Q. Please discuss the solar FIT.

A. In March 2009, GRU became the first utility in the US to offer a European-style solar FIT. Under this program, GRU agrees to purchase 100 percent of the distributed solar power produced from any private installation at a fixed rate for a contract term of 20 years. The FIT rate is set at a level designed to recover costs and provide a profit to system owners in order to incentivize the installation of solar in the Gainesville community and help create a strong solar marketplace.

Q. Please describe GRU's transmission system.

A. GRU's bulk electric power transmission network consists of a 230 kV radial and a 138 kV loop connecting GRU's two generating stations, GRU's nine distribution substations, one 230 kV and two 138 kV interties with PEF, a 138 kV intertie with Florida Power & Light Company, a radial interconnection with

Clay Electric Cooperative at the Farnsworth Substation, and a loop-fed interconnection with the City of Alachua at Alachua No. 1 Substation.

Q. What planning reliability criteria does GRU use?

A. GRU uses a minimum 15 percent reserve margin criterion for both summer and winter seasons. This is lower than the minimum 20 percent reserve margin criterion that the investor owned utilities in Peninsular Florida have stipulated to use. The 15 percent minimum reserve margin is equal to the 15 percent minimum reserve margin requirement in Rule 25-6.035, F.A.C., required for reserve sharing in the State. The 15 percent minimum reserve margin is also consistent with the reserve margin criterion used by many other utilities across the nation.

Q. How is the 15 percent reserve margin criterion applied?

A. The 15 percent reserve margin criterion is applied to GRU's annual peak demand projections. GRU plans to have available capacity, including capacity from generating units owned by GRU and provided to GRU through PPA resources, that exceeds the annual peak demand plus the 15 percent reserve margin.

Q. Please discuss GRU's expected need for additional capacity to satisfy reserve margin requirements under the base case load forecast.

A. Due to GRU's demand-side management programs, distributed generation at the South Energy Center and the solar FIT, GRU's initial need for additional capacity to maintain reserve margin requirements is expected to occur in 2023 based on our most recent forecasts, which reflect recent economic downturns in the Florida economy.

Q. Please describe the economic parameters used in the GREC Need for Power Application, Exhibit No. __ [GREC-1].

A. A 2.5 percent annual general inflation rate was used. Escalation rates of 2.5 percent annually were used for capital and O&M costs. An annual rate of 4.2 percent was used for the long-term tax-exempt municipal bond interest rate, interest during construction rate, and present worth discount rate. The 4.2 percent rate is based on GRU's current cost of capital.

Q. Are these economic parameters appropriate for use in this Need for Power Application?

A. Yes. They are consistent with current economic conditions and economic parameters that been used in similar evaluations before the Florida Public Service Commission. More importantly, they are internally consistent across the economic evaluations of the GREC LLC PPA included in the GREC Need for Power Application, Exhibit No. __ [GREC-1].

Q. Please summarize GRU's planning activities that led to the decision to pursue the PPA with GREC LLC.

A. GRU began an intensive resource planning process in 2003, when our need for additional baseload capacity was in the 2011 timeframe. Extensive, in-depth discussions with the community followed and included evaluations of demand and supply resources, consideration of air quality, and consideration of climate change trends. The resulting process included numerous major policy changes that are summarized in Section 8.1 of the GREC Need for Power Application, Exhibit No. __ [GREC-1], while the timeline of public participation activities is presented in Section 8.2. GRU's integrated resource planning process ranged from technology feasibility screening studies and bus bar comparisons to detailed generation optimization studies.

GRU's resource planning process led to several decisions, including the adoption of using the Total Resources Cost (TRC) test instead of the Rate Impact Measure (RIM) test when evaluating the cost-effectiveness of DSM measures; the issuance by GRU of a solicitation to garner information on the state of the art in power generation (i.e. gasification, integrated gasification combined cycle, plasma arc, etc.); and the decision to not consider additional fossil fuel resources and instead pursue biomass for future baseload capacity. Ultimately, GRU issued a competitive biomass solicitation in 2007. Prior to, and in conjunction with, the competitive biomass solicitation, four biomass

resource studies were conducted to determine if sufficient fuel might be available within reach of a biomass plant constructed within GRU's system.

Q Who made the decision to only consider biomass fueled technologies, and why?

A. That decision to pursue only biomass options was made by the seven member Gainesville City Commission (City Commission) on June 18, 2007 after spending several years discussing and reviewing alternatives for future power supply and extensive public outreach and community participation. A number of factors contributed to this decision which was primarily made for long term strategic purposes rather than strictly short term economic benefits. Concern about climate change and potentially consequent regulations that would drive up power production costs for conventional fuels, especially coal was a topic discussed very thoroughly. This concern was the manifest reason that the City passed a resolution to meet the US Mayors' Climate Protection Agreement to meet Kyoto protocols. The City Commission was also keenly sensitive to the environmental emissions associated with various fuels other than carbon, which led to a preference for the use of woody biomass materials rather than municipal solid waste. The City Commission was very aware of the increasing volatility and cost of natural gas and coal, and the benefits of improving energy independence and fuel diversity. Biomass fuels are readily available and for all intents and purposes immune from interruption due to transportation blockages. Finally, the City Commission was aware of the age of GRU's generation fleet,

and investing in an appropriate technology with immediate environmental, local economic, and regulatory hedge value, combined with the ability to meet long term capacity and reliability requirements, was a policy decision they made unanimously May 7, 2009.

Q. Please discuss GRU's PPA with GREC LLC.

A. GRU has entered into a 30 year PPA (from the date of completion of the facility) to purchase 100 percent of the output of the GREC biomass facility. The PPA has been structured to provide long term stable pricing while avoiding any potential for stranded cost. This has been accomplished by structuring all billing elements on a cost per MWh basis. GRU only pays for fixed costs for available energy, and only pays for fuel and variable O&M when GRU actually accepts delivery. In this context, fixed costs include all construction, financing, operation and maintenance costs as a charge per MWh that will not change over the 30 year term of the PPA. The PPA also includes a guaranteed heat rate and availability. The facility will be constructed on property leased from GRU on the Deerhaven power plant site.

Q. Please describe how the PPA protects GRU from risk.

A. The PPA protects GRU from at least five types of risks: construction risk; financing risk; operational risk; inflation risk; regulatory risk; and replacement power costs in the event of Deerhaven Unit 2 outages. GREC LLC bears all the risk of construction cost overruns and financing interest rate changes once the

notice to commence is issued. The fixed costs associated with the project are based on a $/MWh energy charge. Thus, if the project is not available to run, GRU won't pay for the fixed costs associated with the project. GRU has the right to dispatch the project as needed and can reduce its generation down to the project's minimum load. The non-fuel energy charge for fixed costs does not escalate over the term of the PPA which protects GRU from the risk of inflation. The use of biomass also protects GRU from a number of regulatory risks related to potential renewable energy portfolio requirements and regulations imposing carbon constraints as will be discussed later in my testimony.

Q. Given the timing of the need for additional capacity to maintain reserve margin requirements that you discussed previously relative to the commercial operation date of the GREC biomass facility, has GRU considered sharing the capacity from GREC with other parties?

A. Yes. GRU is currently negotiating with other municipal utilities that have expressed an interest in becoming a counter party to take a share of the renewable energy output from the GREC for the initial period of operation.

Q. What sort of off-take arrangements are being considered by GRU?

A. GRU envisions structuring an arrangement whereby the counter party(s) will share the costs borne by GRU on a pro-rata basis with the addition of wheeling fees and transmission losses required for the delivery of power to the border of

GRU's control area. GRU is considering reselling 50 percent of the facility's output for the initial ten years of GREC's operation.

Q. Have other entities expressed an interest in such an arrangement with GRU?

A. Yes. To date, at least four municipal utilities have expressed interest in such an arrangement.

Q. Please summarize GRU's historical and ongoing DSM efforts.

A. GRU has been offering incentives and services to encourage energy conservation and demand reduction since 1980. Through 2008, GRU's DSM programs have resulted in cumulative energy reductions of 151 GWh and cumulative peak demand savings of 30 MW. Through 2025, GRU is projecting cumulative energy savings of 366 GWh and cumulative peak demand savings of 108 MW. GRU's existing residential and non-residential DSM programs are summarized in Exhibit No. __ [EJR-2].

Q. Does GRU use rate design to promote energy conservation?

A. Yes. As shown in Exhibit No. __ [EJR-3], GRU has implemented increasing block rates for residential and general service non-demand customers t result in higher costs of electricity as consumption increases. GRU also offers time-of-use rates for all customer classes. Exhibit No. __ [EJR-3] summarizes the history of these rates and charges from fiscal year 1997 through fiscal year 2010.

Also included in Exhibit No. __ [EJR-3] is the annual average fuel adjustment, which is applied equally to all kWh sales.

Q. Please discuss GRU's public infrastructure projects.

A. GRU's newest generating unit is the South Energy Center, the first combined heat and power (CHP) plant of its type to serve a hospital in the southeast. The plant is 75 percent thermally efficient, and the site offers the opportunity for expansion to provide services to other nearby public facilities.

GRU has supported City of Gainesville infrastructure improvements such as light emitting diode (LED) stoplights and LED crosswalk signals. GRU successfully partnered with the City of Gainesville in pursuing federal funds for a demonstration PV array atop the GRU Administration Building and LED pedestrian lighting at several city-owned facilities.

Q. Please discuss GRU's supply-side efficiency activities.

A. GRU has several programs to improve the adequacy and reliability of the transmission and distribution systems, resulting in reduced energy losses. Our activities include installing distribution capacitors, purchasing high-efficiency distribution transformers, and reconductoring the feeder system.

Q. How will the PPA with GREC LLC benefit GRU from a strategic perspective?

A. GRU's PPA with GREC LLC will provide GRU with numerous benefits from an economic, environmental, and regulatory perspective. The pricing structure of the PPA with GREC LLC is roughly two thirds fixed over the 30 year term of the PPA, and the portion that is not fixed is not nearly as volatile as natural gas or even spot coal prices.

GRU's PPA with GREC LLC will provide long term benefits to the community and GRU's ratepayers. Over the term of the PPA, the cost of energy from the GREC LLC PPA will be more economical than conventional combined cycle capacity. The PPA also brings benefits in the form of replacement capacity for units scheduled to be retired. The GREC LLC PPA will add value to GRU's generation portfolio by modernizing GRU's generating fleet, of which two thirds of the capacity is currently at least 28 years of age. The capacity from the GREC facility will improve GRU's generating system reliability from both a firmness of capacity perspective and from the perspective of exposure to high costs of replacement power.

In addition, the GREC capacity will provide benefits from a regulatory perspective, helping GRU to satisfy the renewable energy portfolio standards that have been proposed at the state and federal levels and will serve as a hedge against the risk associated with potential future regulations of CO_2 emissions.

The price of biomass as fuel for the GREC facility is expected to be much less volatile than conventional fossil fuels and is expected to escalate much more slowly. The benefits of biomass from a fuel diversity standpoint include benefits in terms of diversity of transportation, mitigating fuel price volatility, and contributing to Florida's overall energy independence.

Other aspects of the GREC biomass facility contribute to the Gainesville community, and some of these more tangible benefits associated with the GREC facility include minimal exposure to construction and operating risk, creation of over 500 jobs in the region, substantial reduction in the open burning of biomass, no surface water discharge of industrial wastewater, reducing landfill requirements, promoting ecosystem restoration, promoting removal of hazardous fire fuel adjacent to urban development, and supporting silviculture, a major regional industry.

Q. How will delay in operation of the GREC biomass facility adversely impact GRU?

A. In general, delay in operation of the GREC biomass facility will postpone GRU's realization of all the benefits associated with the project that I have discussed previously in my testimony. If the GREC biomass facility has not begun commercial operation by January 1, 2014, it will not be eligible to obtain the Renewable Energy Grant contained in H.R. 1 (the American Recovery and Reinvestment Act of 2009). The increase in GRU's cost of power from the

GREC facility resulting from not obtaining the Renewable Energy Grant is $8.10/MWh, which equates to $6.4 million per year.

The PPA with GREC LLC contains a clause to adjust the nonfuel energy charge by escalation indices to the time of construction commencement. Based on the 2.5 percent escalation discussed previously in my testimony, the cost of delay is $29.6 million per year of delay.

Additional consequences of delay include postponing indirect economic benefits. GREC will employ an estimated 44 people in operation of the project with an estimated payroll of $4 million per year. An additional 400 to 500 people will be employed obtaining the fuel supply, with an estimated annual payroll of $18 million. At peak construction, GREC will employ 400 people with an estimated payroll of $1.5 million per week during the peak construction period. Over the entire construction cycle, construction payroll will total approximately $48.8 million.

Delay in operation of the GREC biomass facility will delay the reliability benefits, as well the regulatory and legislative benefits, associated with the GREC LLC PPA that I have discussed previously.

Q. How will GRU's financial position be affected by the PPA with GREC LLC?

A. Given that the transaction with GREC LLC is structured as a PPA rather than GRU obtaining an equity share in the facility, the annual costs for GRU's participation are not tied to an investment in a self-build asset. As such, the ability to finance construction of a new generating unit is not an issue.

GRU's strong credit ratings are, however, important from a project finance perspective, as GRU is the counterparty to the PPA upon which GREC LLC will obtain project financing. Standard & Poor's and Moody's have issued bond ratings to GRU of AA and Aa2, respectively. GRU stands out with these superior ratings, being among the top 20 of the highest rated municipal utilities that are rated by these two agencies. GRU has maintained a total debt service coverage ratio of 2.0 times, a fixed charge coverage of 1.5 times, and an equity ratio of 20-30 percent in fiscal year ending 2009. These economic indicators are projected to continue to improve in later years due to the GREC LLC PPA. All of these ratios are well within the range of other organizations with the same bond ratings from Standard & Poor's and Moody's that GRU has been issued.

Q. In conclusion, what are the main benefits that the PPA with GREC LLC provides GRU?

A. Next to landfill gas, which GRU already has and which is very limited in quantity, biomass generation is the lowest cost renewable energy resource

available to GRU, baseload or otherwise. The structure of the PPA with GREC LLC has the further benefit of providing economical firm, dispatchable power with minimal risk to GRU. The GREC LLC PPA will enhance GRU's system reliability and increase the diversity and reliability of fuel supply for GRU's generating units. The GREC LLC PPA will provide GRU with a substantial hedge against future RPS and regulations of CO_2 emissions.

Q. Does this conclude your testimony?

A. Yes.

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.