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## Public Service Commission

July 14, 2008

All RPS Rulemaking Participants

### Re: Renewable Portfolio Standard (RPS) Data Collection

Dear Participant:

As discussed during the July 11, 2008 workshop on the development of a renewable portfolio standard (RPS), Section 366.92(3) directs the Commission to evaluate the cost and technical potential of renewable energy generation methods in Florida through the year 2020. Enclosed are RPS Data Collection forms developed by the Commission staff to obtain this information for analysis. Instructions for completing the forms are also enclosed.

Regulated electric utility participants should complete and return all data forms (RPS Data Forms 1-6) on all technologies listed. Other participants may choose which technologies, if any, they wish to provide information on.

Please complete and return the forms to Karen Webb at [kwebb@psc.state.fl.us](mailto:kwebb@psc.state.fl.us) by 5:00 p.m. July 21, 2008. Should you have any questions about how to complete the forms, please contact Kathy Lewis (850-413-6594) or Phillip Ellis (850-413-6626). Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Mark Futrell".

Mark Futrell  
Public Utilities Supervisor

Enclosures

*kwebb@psc.state.fl.us*

RPS Data Form 1: Renewable Generating Technologies

Company Name: BIOMASS GAS + ELECTRIC, LLC (BGE)  
 Applicable Utility Service Area: TALLAHASSEE UTILITIES

Renewable Technologies	
Solar	Photovoltaic (PV)
	Photoelectrochemical (H2)
	Thermal Electric Plant
Wind	Inland
	Coastal
	Offshore
Hydroelectric	Dam (Incremental)
	Diversion (Run of the River)
	Pumped Storage
Geothermal	Dry Steam
	Flash
	Binary
Ocean Energy	Wave Action
	Tidal Change
	Thermal Gradients (OTEC)
	Ocean Currents
Biomass - Direct Combustion	Plant Matter
	Animal Waste
	Vegetable Oil
Biomass - Conversion to Liquid	Biodiesel / Renewable Diesel
	Ethanol - Cellulosic
	Ethanol - Non-Cellulosic
	Pyrolysis
Biomass - Conversion to Gas	Anaerobic Digester
	Gasification ✓
	Renewable Natural Gas
Landfill Gas	Methane Combustion
Municipal Solid Waste	Biogenic
	Non-Biogenic
Hydrogen, renewable	Fuel Cells
	Combustion
Waste Heat	Sulfuric Acid Manufacturing
Other	Other

Circulating Fluid  
 BED GASIFIER  
 W/ GAS CLEAN-UP  
 AND COMBINED  
 CYCLE (2) GAS  
 TURBINES AND (1)  
 STEAM TURBINE  
 GENERATOR

**RPS Data Form 2: Conventional Generating Technologies**

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Company Name: BG + E

Applicable Utility Service Area: N/A

<b>Conventional Technologies</b>	
<b>Natural Gas</b>	Combustion Turbine
	Combined Cycle
<b>Coal</b>	Integrated Gasified Combined Cycle
	Supercritical Pulverized Coal
<b>Nuclear</b>	Steam Generation
<b>Other</b>	Other

RPS Data Form 3: Commercial Availability Data

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Company Name:

BGE

Energy Resource:

TALLAHASSEE BIOMASS (WOODY) PROJECT

Typical Unit Annual Capacity Rating (MW)	44 NET
Earliest Commercial In-Service Date (Year)	2010
Typical Construction & Permitting Time (Years)	3 YRS
Useful Life of Unit (Years)	30+ YRS
Fuel Type	OPEN + CLOSED LOOP CLEAN WOOD BIOMASS

RPS Data Form 4: Performance Characteristics Data

Company Name: BG + E  
 Energy Resource: TALLAHASSEE WOOD BIOMASS PROJECT

Contribution to Summer Peak Demand (MW)	BASE LOAD
Contribution to Winter Peak Demand (MW)	BASE LOAD
Average Annual Heat Rate (BTU/kWh)	9,000 BTU/kWh (EST.)
Equivalent Availability Factor (%)	92+ % (EST.)
Average Annual Generation (MWH)	354,596 MWH/YR
Resulting Capacity Factor (%)	92+ % (EST.)

RPS Data Form 5: Environmental Characteristics Data

Company Name:

BG + E

Energy Resource:

TALLHASSEEWODY BIOMASS PROJECT

Emission Rates	Carbon Dioxide (CO <sub>2</sub> ) (lb/kWh)	UNDER REVIEW
	Sulfur Dioxide (SO <sub>2</sub> ) (lb/kWh)	UNDER REVIEW
	Nitrogen Oxide (NO <sub>x</sub> ) (lb/kWh)	UNDER REVIEW
	Mercury (Hg) (lb/kWh)	NONE
	Water Usage (gal/kWh)	PLANNED GREY WATER FROM CITY OF TALLHASSEE

RPS Data Form 6: Estimated Cost Data

Company Name: BGE  
 Energy Resource: TALLAHASSEE WOODY BIOMASS PROJECT

	First Year of Commercial Operation (Year)	2010
Installed Capital	Cost <sup>(1)</sup> (\$/kw)	EST \$3,000
	Escalation Rate (%)	N/A
Fixed O & M	Cost <sup>(1)</sup> (\$/kw-year)	\$0.062/kwh YR.1
	Escalation Rate (%)	N/A
Variable O & M	Cost <sup>(1)</sup> (\$/kwh)	\$0.062/kwh YR.1
	Escalation Rate (%)	N/A
Energy	Cost <sup>(1)</sup> (\$/kwh)	N/A
	Escalation Rate (%)	N/A
	Levelized Cost <sup>(2)</sup> - Life of Unit (cents/kwh)	N/A

(1) Expressed in year dollars associated with the first year of commercial operations

(2) Cumulative Present Value Total Revenue Requirements levelized over the life of the unit expressed in year dollars associated with the first year of commercial operation

RPS Data Form 1: Renewable Generating Technologies

Company Name: Biomass Gas + Electric, LLC (BG+E)  
 Applicable Utility Service Area: Progress Energy #1 + #2

Renewable Technologies	
Solar	Photovoltaic (PV)
	Photoelectrochemical (H2)
	Thermal Electric Plant
Wind	Inland
	Coastal
	Offshore
Hydroelectric	Dam (Incremental)
	Diversion (Run of the River)
	Pumped Storage
Geothermal	Dry Steam
	Flash
	Binary
Ocean Energy	Wave Action
	Tidal Change
	Thermal Gradients (OTEC)
	Ocean Currents
Biomass - Direct Combustion	Plant Matter
	Animal Waste
	Vegetable Oil
Biomass - Conversion to Liquid	Biodiesel / Renewable Diesel
	Ethanol - Cellulosic
	Ethanol - Non-Cellulosic
	Pyrolysis
Biomass - Conversion to Gas	Anaerobic Digester
	Gasification ✓
	Renewable Natural Gas
Landfill Gas	Methane Combustion
Municipal Solid Waste	Biogenic
	Non-Biogenic
Hydrogen, renewable	Fuel Cells
	Combustion
Waste Heat	Sulfuric Acid Manufacturing
Other	Other

Fluid Bed Combuster with overfire into a steam boiler and steam turbine generator.



**RPS Data Form 2: Conventional Generating Technologies**

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Company Name:

N/A

Applicable Utility Service Area:

<b>Conventional Technologies</b>	
<b>Natural Gas</b>	Combustion Turbine
	Combined Cycle
<b>Coal</b>	Integrated Gasified Combined Cycle
	Supercritical Pulverized Coal
<b>Nuclear</b>	Steam Generation
<b>Other</b>	Other

RPS Data Form 3: Commercial Availability Data

Company Name:

BGE

Energy Resource:

PROGRESS ENERGY #1 + #2

Typical Unit Annual Capacity Rating (MW)	75 MW EACH #1 + #2
Earliest Commercial In-Service Date (Year)	JAN 2011 #1 JUN 2011 #2
Typical Construction & Permitting Time (Years)	3 YEARS EACH
Useful Life of Unit (Years)	30+ YEARS
Fuel Type	OPEN + CLOSED LOOP CLEAN WOOD BIOMASS

RPS Data Form 4: Performance Characteristics Data

Company Name: Biomass Gas + Electric, LLC  
Energy Resource: CENTRAL FLORIDA BIOMASS PLANT #1 + #2

Contribution to Summer Peak Demand (MW)	N/A
Contribution to Winter Peak Demand (MW)	N/A
Average Annual Heat Rate (BTU/kWh)	9,800
Equivalent Availability Factor (%)	92%
Average Annual Generation (MWh)	604,440 MWh/YR
Resulting Capacity Factor (%)	92%

RPS Data Form 5: Environmental Characteristics Data

Company Name: Biomass Gas + Electric, LLC  
 Energy Resource: CENTRAL FLORIDA BIOMASS PLANT #1 + #2

Emission Rates	Carbon Dioxide (CO <sub>2</sub> ) (lb/kWh)	ENGINEERING NOT YET COMPLETED. (TBD)
	Sulfur Dioxide (SO <sub>2</sub> ) (lb/kWh)	TBD
	Nitrogen Oxide (NO <sub>x</sub> ) (lb/kWh)	TBD
	Mercury (Hg) (lb/kWh)	TBD
	Water Usage (gal/kWh)	NO FRESH WATER ANTICIPATED TO BE USED FOR PLANT OPERATIONS

RPS Data Form 6: Estimated Cost Data

Company Name: Biomass Gas + Electric, LLC  
 Energy Resource: CENTRAL FLORIDA BIOMASS PLANT #1 + #2

	First Year of Commercial Operation (Year)	JAN 2011 , JUN 2011
Installed Capital	Cost <sup>(1)</sup> (\$/kw)	\$ 2,270.00 (EST)
	Escalation Rate (%)	3%
Fixed O & M	Cost <sup>(1)</sup> (\$/kw-year)	TBD
	Escalation Rate (%)	TBD
Variable O & M	Cost <sup>(1)</sup> (\$/kwh)	TBD
	Escalation Rate (%)	TBD
Energy	Cost <sup>(1)</sup> (\$/kwh)	TBD
	Escalation Rate (%)	TBD
	Levelized Cost <sup>(2)</sup> - Life of Unit (cents/kwh)	TBD

(1) Expressed in year dollars associated with the first year of commercial operations  
 (2) Cumulative Present Value Total Revenue Requirements levelized over the life of the unit expressed in year dollars associated with the first year of commercial operation