



September 23, 2009

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### **VIA HAND DELIVERY**

Ms. Ann Cole, Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, FL 32399-0850

Re: Petition of Progress Energy Florida, Inc. for approval of a negotiated purchase power contract with Florida Biomass Energy, LLC; **Docket No. 090372-EQ** 

Dear Ms. Cole:

Please find enclosed for filing on behalf of Progress Energy Florida, Inc. ("PEF") the original and five (5) copies of our responses to Staff's data request dated September 9, 2009 in the above referenced docket.

Thank you for your assistance in this matter. Please call me at (727) 820-5184 should you have any questions.

Sincerely, Lohn T. Burnettens

onn T. Burnett

JTB/lms Attachment COM \_\_\_\_

DOCUMENT NUMBER-DATE

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# PROGRESS ENERGY FLORIDA, INC.'S RESPONSES TO STAFF DATA REQUEST DOCKET NO. 090372-EQ

1. Please provide all non-privileged correspondence between Florida Biomass (FB) Energy and Progress regarding the proposed contract. If not evident from the correspondence, please include a timeline for the correspondence.

Answer: Please see Attachment A containing five documents:

- An email from Rick Jensen to David Gammon dated March 12, 2009 naming the project and containing preliminary information about the project;
- A term sheet signed by David Gammon on March 12, 2009. While FB Energy did not execute this term sheet, it outlines the terms on which the final PPA was based;
- Power Point slides that FB Energy presented to the Manatee County Commission on April 21, 2009.
- An overview that FB Energy provided to PEF on May 4, 2009; and
- An email clarifying the Stipulated Commercial Operation Date and the Execution Date from Rick Jensen to David Gammon dated September 15, 2009.
- 2. Please provide any timelines that have been established regarding permitting, construction, and operation of the proposed Florida Biomass (FB) Energy facility.

Answer: Please refer to Attachment A provided in response to Question 1 which contains an overview regarding permitting, construction and operation.

3. Please refer to Section 2.3.1 titled "Conditions Precedent." Please provide all timelines and assumptions regarding subsections (a) through (h).

<u>Answer</u>: The timeline for the "Conditions Precedent" was negotiated to balance FB Energy's need for a reasonable amount of time to complete these tasks and PEF's need for to ensure that the project is proceeding in a timely manner.

4. Please refer to Section 2.3.1. Please explain why the information contained in this information is confidential.

Answer: The time requirement in Section 2.3.1 is confidential because of the need to balance FB Energy's need for a reasonable amount of time to complete these tasks and PEF's need to ensure that the project is proceeding in a timely manner. If the information was disclosed, it could adversely affect negotiations with other renewable generators. The amount of time allowed for this project may not be appropriate for another type of generation project.

5. Please provide any timelines relating to the proposed FB Energy / Progress purchase and sale agreement.

Answer: PEF does not have timelines for the negotiation of a QF contract. The time required can vary from a few days to a few months depending upon the uniqueness of the QF. In this case, FB Energy first contacted PEF via email on March 12, 2009 with details about the project. There had been previous face-to-face and telephone discussions, including pricing, but the project began to firm up with the March 12, 2009 email.

6. Please refer to Section 2.1. Please verify the effective date of the proposed agreement. Is it upon approval by the Florida Public Service Commission?

Answer: The Effective Date of the proposed agreement is July 10, 2009, the date the agreement was signed by both parties.

7. Please refer to Section 2.6 (iii). Please clarify the section which states "if the FPSC refuses to enter an order upon the request for approval within 180 days of the Effective Date by both parties....." Does this refer to the July 10 date mentioned on page 1 of the petition?

Answer: Yes. Please refer to PEF's response to Question 6.

8. Please refer to Section 3.2. The information states: "The Stipulated Commercial Operation Date, subject to day-for-day extension due to Force Majeure, shall be December 1, 2013." As the avoided unit in your analysis (Suwannee CC) has an expected in-service date of January 2013, please clarify what appears to be a discrepancy.

Answer: The Stipulated Commercial Date is December 31, 2012. The date in the agreement is incorrect.

9. Please refer to Section 8.1. Please clarify whether the confidential figure mentioned under the Project Energy Payment is a fixed energy payment.

<u>Answer</u>: The confidential figure in Section 8.1 is a fixed payment in \$/MWh that includes both a capacity component and an energy component.

10. Please refer to Section 9.13. Does the contingency fee go back through the Energy Cost Recovery Clause?

<u>Answer</u>: PEF proposes to apply the contingency fee back through the Capacity Cost Recovery Clause.

11. Please refer to Section 12.5.3. What Change(s) in Law(s) would raise Progress' and/or FB Energy's costs?

Answer: While PEF and FB Energy cannot anticipate all the changes in law that could raise the parties cost, the types of change in law that can be anticipated include changes to environmental laws that may place a tax or cap on carbon or some other byproduct of energy production.

12. Please refer to page 34 of the agreement. Please clarify the statement that says "as of the day and year first above written." Which date is the statement referring to?

<u>Answer</u>: The date was inadvertently omitted. The correct date is July 10, 2009. Attached in PEF's response to Question 1 is an email from FB Energy confirming the effective date.

# 13. Is the proposed agreement by Progress and FB Energy contained in Progress' Ten Year Site Plan?

<u>Answer</u>: No, the Ten Year Site does not contain information about the FB Energy contract. Such information would not be included until the FB Energy contract is approved by the Commission. At such time, the information of the FB Energy contract would be included in the subsequent Ten Year Site Plan.

14. Please see the attached chart. Using the chart as a template, please complete the following comparison scenarios. Using the most recent fuel forecasts, provide Annual and CPURR dollars of the proposed contract between Progress and FB Energy compared to: the 2008 standard offer contract, the current standard contract, and the Suwannee CC avoided unit at the minimum and maximum capacity factors.

Answer: Please see Attachment B. PEF is uncertain of the meaning of the minimum and maximum capacity factors referred to in this question. PEF has assumed that the minimum capacity factor is 74%, the capacity factor at which the capacity payments would be zero under the 2008 Standard Offer contract and the maximum capacity factor is 89%, the lowest capacity factor required to receive 100% of the capacity payment under the 2008 Standard Offer Contract. Attachment B contains the following:

- Table 1 reflects the forecasted payments compared to the 2008 Standard Offer Contract avoided cost, the 2008 Ten Year Site Plan fuel forecast, and the maximum capacity factor.
- Table 2 reflects the forecasted payments compared to the 2008 Standard Offer Contract avoided cost, the 2008 Ten Year Site Plan fuel forecast, and the minimum capacity factor.
- Table 3 reflects the forecasted payments compared to the 2008 Standard Offer Contract avoided cost, the 2009 Ten Year Site Plan fuel forecast, and the maximum capacity factor.
- Table 4 reflects the forecasted payments compared to the 2009 Standard Offer Contract avoided cost, the 2009 Ten Year Site Plan fuel forecast, and the maximum capacity factor.

PEF amended a few of the column headings to clarify the data contained in the columns. The columns continue with the same numbering system as the template provided with the data request.

- Column 1 is the negotiated capacity payment rate in \$\frac{1}{k}W\$-month.
- > The group of columns labeled 2 are first the negotiated energy payment rate in \$/MWh, then the negotiated delivery voltage adjustment in \$/MWh, and finally, the sum of these two columns or the total negotiated energy payment rate in \$/MWh.
- ➤ Column 3 is the capacity payment rate from the standard offer contract in \$/kW-month.
- > The group of columns labeled 4 are first the standard offer energy payment rate in \$/MWh, then the standard offer delivery voltage adjustment in \$/MWh, and finally,

the sum of these two columns or the total standard offer energy payment rate in \$/MWh.

- ➤ Column 5 is the annual negotiated capacity payment in thousands of dollars.
- Column 6 is the annual negotiated energy payment in thousands of dollars.
- > Column 7 is the annual total negotiated payment in thousands of dollars and this is the sum of columns 5 and 6.
- Column 8 is the total annual negotiated payment expressed in \$/MWh.
- > Column 9 is the annual standard offer avoided capacity payment in thousands of dollars.
- > Column 10 is the annual standard offer avoided energy payment in thousands of dollars.
- Column 11 is the annual total standard offer avoided payment in thousands of dollars and this is the sum of columns 9 and 10.
- > Column 12 is the total annual standard offer avoided payment expressed in \$/MWh.
- ➤ Column 13 is the difference between columns 7 and 11 or the difference between the total annual negotiated payment and the total annual standard offer avoided payment in thousands of dollars.

Nominal sums and NPVs have been provided on columns 6, 7, 9, 10, 11, and 13. The discount rate and discount date are provided on the top of the sheet.

# 15. Are the fuel prices used in the negotiated contract current with Progress' Ten Year Site Plan?

Answer: The fuel prices used in the negotiated contract were from the 2008 Ten Year Site Plan.

### Gammon, David W

From: Rick Jensen [rjensen@fbenergy.com]
Sent: Thursday, March 12, 2009 2:16 PM

To: Gammon, David W

Subject: project name and overview info

Left a voice message, but the project name would be FBenergy Manatee Facility, LLC. This is all still confidential as we are slowly working thru meeting with the various players in the county so we don't offend anyone but not having them in the loop/know. We want to have everything contracted and lined up before we announce the project publically and we will even be meeting with some of the environmental groups to get their support. And will have a PR roll-out plan defined/set up.

But for your use as internal support information:

- Site term sheet in hand
  - Water grey water from county (meeting and working out details)
  - Zoning met with key players who have given support to getting power plant zoning.
  - Will be using bio-diesel for start-up fuel (so this will be a totally green project)
  - All other needed utilities available on the site
  - o Geo-tech completed
  - o Boundary plans, etc completed
  - Environmental assessment completed
  - o FPL power lines front the property (will have to wheel the power to Progress)

#### Feedstock

- 4 sources used to facilitate having a minimum of 14-21 days on site;
  - Local resource recovery company can/willing to provide up to 100% under contract
  - Experienced aggregator has committed to a per ton fee arrangement 9local experience of 17 years)
  - Pellet manufacturer is leasing space for a 500,000 ton storage facility next to the FBenergy location and will provide some waste materials to our project (more costly but always available if needed)
  - Farming will be contracting for some % of the project fuel thru local and extended farming operations.

### Permitting

- Initial conversation with the Florida DEP have garnered their support for this project
  - The project will be permitted at the 100 ton level, but will have actual "make good" guarantees from the technology provider for 65tons per year.
  - The project internal goal is to achieve the lowest possible emissions (in a commercially replicable package)- the target is non-attainment emission levels which are 25 tons per year
  - Most of these improved emissions will be attained thru the application of the best known emission equipment in duplicate and redundant passes. the technology provider while giving the 65 tpy guarantee in very interested in working with FBenergy to develop the lower emission package. FBenergy's engineering team and AEE have already started design meetings to achieve this lower level.
  - FBenergy has been told if application is made within the 2<sup>nd</sup> Q of 2009 the project air permit should be complete and issued by the end of 2009.

#### Technology

- Technology provider has significant experience and corporate strength AEE von roll.
- Project is using a existing and standard technology CFB with an output of ~ 60MW
- The selected CFB is currently in use at other US and international locations and provides and availability of 90%+(also a "make good" guarantee by AEE)

This specific design is a duplicate of a project slated for ground breaking in the 2<sup>nd</sup> Q of this year in South Georgia. FBenergy will get the benefit of the construction company (McBurney) working out all of the on-site design modifications/corrections and bring them to the Manatee project, thereby reducing time and costs.

### Funding

- FBenergy's initial investor group has put up the development capital to complete;
  - site zoning,
  - air permitting application and support,
  - technology design refinement
- Several large fund groups have reviewed the project overview and are interested in stepping in to complete financing once the book is ready (key stipulations for the book include zoning, tech completion, and air permitting fatal flaw review which should be completed within 2 months of application.)

#### Team

- o Corporate staff: Rick Jensen, Ginger Wetherell, Robert Ashburn
  - Legal Patty Petruff: Bradenton Atty
- o Engineering and project staff
  - Golder Associates; Scott Osborne lead (permitting and site)
  - Andrew Grant lead Engineer/strong CFB experience
  - Jonathan Moore Electrical and Controls
  - Dan Itse Environmental Systems
  - Subodh Jain Civil and Structural
  - Bob Devilio Fluid Bed Specialist
  - Steve Ghasvini Civil and Site Engineering

Let me know what other information would support your internal needs/efforts

Rick Jensen FBenergy, LLC 404-229-8845

# Term Sheet for Power Purchase and Sale Agreement between Progress Energy Florida, Inc.

FBenergy Manatee Facility, LLC

The provisions of this Term Sheet are intended only as an expression of the parties' current intent and are not intended to be legally binding on either Party. Unless and until a binding definitive agreement has been executed and delivered by both parties, neither party shall have any legal obligation of any kind to the other party whatsoever with respect to the subject matter of this Term Sheet.

Seller A Florida corporation, FBenergy Manatee Facility, LLC

Buyer Progress Energy Florida, Inc

**Facility** Renewable electric generating facility with capability to

wheel/deliver power to Buyer, with a nameplate rating of approximately 40 or 60 MW. (final determination by Seller

based on initial permit review).

Term Minimum 20 years from Commercial Operation Date.

Commercial The date on which the Facility is in compliance with all applicable permits and Seller has notified Buyer that the Facility

is available to supply power under the terms of the agreement.
Seller expects the Commercial Operation Date to occur by

December 31, 2012.

**Location** Project site is 35 acres on the Eastport property is located in the

northwest corner of Manatee County, Florida immediately

across Hwy 41 from the entrance to Port Manatee.

Conditions Either party will have the right to terminate the agreement, without liability to either party, if Seller has not obtained the

following within 90 days from date of this term sheet:

Project development financing

Site lease

o Satisfactory fatal flaw review of required regulatory

approvals

Contract Capacity: 40/60 MW

### Energy

MW Unit- energy output of the Facility up to the Facility's annual permit limits.

#### **Exclusion of RECs**

Seller retains all Renewable Energy Credits, emission allowances and other environmental attributes associated with the energy delivered to Buyer. Buyer will have first right to negotiate with Seller for the purchase of REC's.

#### **Delivery Point**

The Delivery Point is into Buyer's transmission system. Seller is responsible for all costs and losses to the Delivery Point. Buyer is responsible for all transmission costs and losses at and from the Delivery Point.

# Capacity and Energy Payments

Beginning on the Commercial Operation Date, Buyer will pay to Seller, monthly in arrears, an aggregate monthly capacity payment and monthly energy payment such that the effective rate is not less than \$71.00/MWh. The energy payment is subject to annual escalation of 1.5% with the first year starting on January 1, 2014 and continuing each January first thereafter until the termination date of the Agreement.

### Guaranteed Availability

In the event that the Capacity Factor for the Facility over a rolling 12-month period is less than 75% (the "Deficiency Percentage"), the Capacity and Energy Payment will be reduced by 25%.

"Capacity Factor" equals (1) total energy delivered divided by (2) the sum of the Contract Capacity for each hour during the applicable period, excluding from both clauses (1) and (2) periods of force majeure and planned maintenance.

# Additional Payments

In the event that a change in law, rules or regulations (including those of FERC) imposes additional capital, operating, environmental, tax or other mandatory costs on Seller above a threshold amount to be negotiated in the Agreement, Buyer will agree to attempt to recover such costs. In the event that the Buyer cannot recover recover such costs then the Parties have the right to terminate the Agreement.

### Force Majeure

If force majeure results in a suspension of performance for more than six months, then unless the affected party is exercising due diligence in efforts to cure the force majeure, the unaffected party may terminate the agreement, without further liability of either party. Force majeure is an event or circumstance unanticipated at the time of the agreement that is beyond the reasonable control of the affected party and not caused by that party's negligence or lack of due diligence.

#### **Testing**

Buyer will purchase test energy generated by the Facility at Buyer's as-available rate. Seller will use reasonable efforts to schedule test energy at times desired by Buyer.

### Planned Maintenance

Annual planned maintenance schedules will be established each year by Seller in cooperation with Buyer. Planned maintenance shall be limited to 15 days per year.

# Operation and Maintenance

Seller will operate the Facility in accordance with Prudent Utility Practices.

#### Insurance

Seller will maintain liability insurance covering its operation and maintenance of the Facility in an amount of \$1 million per occurrence, and will named Buyer as an additional named insured.

### Representations and Warranties

Customary representations and warranties, including those customary for municipal or governmental entities (including priority of obligations), regarding organization, authority, binding nature, no violations, and no proceedings.

### Seller Events of Default

- (a) Failure (except in cases of planned and forced outages and force majeure) to maintain the capability of the Facility to deliver any energy for 60 days and failure to commence a cure within 30 days after written notice from Buyer,
- (b) other material breach of a representation, term or obligation not cured within 60 days of written notice,
- (c) bankruptcy or insolvency.
- (d) changes to the technology or fuel source without prior approval,
- (e) failure to maintain Completion or Performance Security.
- (f) failure to maintain permits or QF status

# Buyer Events of Default

- (a) Failure to pay amounts due within 15 days after written notice from Seller,
- (b) other material breach of a representation, term or obligation not cured within 60 days of written notice, or
- (c) bankruptcy or insolvency.

#### Milestones

A list of milestone dates is to be determined. Failure to meet the

milestone dates will result in penalties, including termination of the Agreement. A security deposit will be negotiated to ensure the completion Completion/ Performance of the project and the on-going operation of the project. Security Assignment Buyer consents to the collateral assignment by Seller of the agreement and will execute such instruments and take such actions as Seller's lenders may reasonably request in connection with such assignment. Florida Biomass Energy, LLC Richard F. Jensen, Manager Date Progress Energy Florida, Inc.

David Gammon, Florida Cogeneration & Renewables

Originator



### **Company Overview**

Florida based renewable company with broad based experience in biomass and CFB (circulating fluid bed) technology

- > Experience of management team: 100+ yrs in fluid bed and renewable
- > Renewable focus: Biomass operation to provide base-load electricity
  - Solar integration to reduce overall emission footprint
  - Torrifaction operation to optimize facility economics and further support environmental benefits (and support local business)
- ➤ Emission focus achieve non-attainment level emissions
  - Single replicable platform allows for continuous improvement



### **Project Overview**

- ➤ 60 MW of electricity to Progress Energy/FPL grid
  - Solar-assisted biomass operation

### ➤ Project Feedstock:

- Locally sourced biomass clean wood waste
- Non Food energy crops grown in Eastern Manatee County/Central
   & South Florida
- Solar integration to reduce overall emission footprint

### ➤ Port use for;

- Receiving feedstock in pellet form, chipped wood and chipped crops
- Shipping outbound torrified wood products to coal plants
  - Wood "baked" to charcoal stage, usable directly in coal facilities as a coal replacement



Port \
Manatee

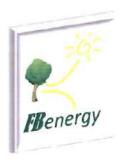
### **Proposed Project Site**

Proposed Biodiesel tank farm

- Reclaimed water conserves potable water
- Wetlands undisturbed
- Substation located adjacent to property (no extension of overhead lines to get power to the grid)
- Berm and landscaping along highway 41





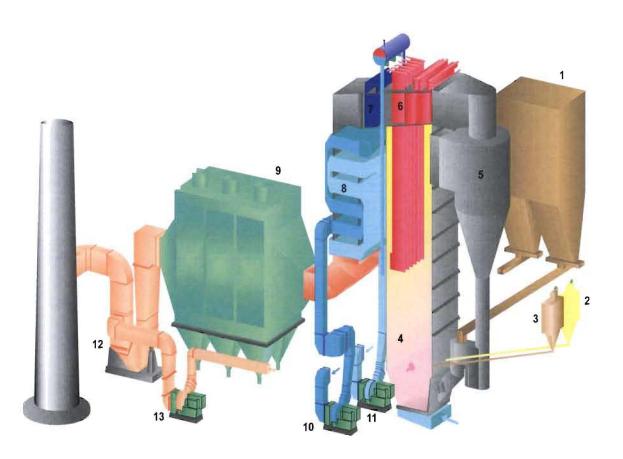


# **AEE CFB Installation**

# in Reading, Pa.



# **Technology Overview**



### 1 Biomass fuel

- 2 Limestone
- 3 Sand
- 4 Combustion chamber
- 5 Cyclone
- 6 Superheater
- 7 Economizer
- 8 Air preheater
- 9 Dust filter
- 10 Secondary air fan
- 11 Primary air fan
- 12 Induced draught fan13 Recirculation fan



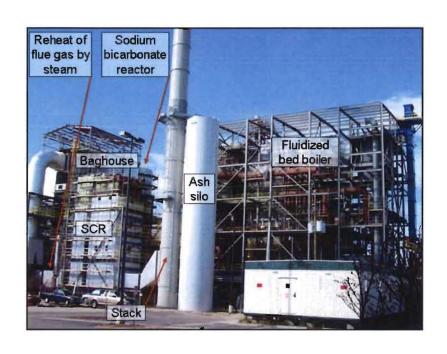
### **Emission Overview**

### Initial Emissions 60% below allowable

The basic CFB (shown earlier) is considered to have low emissions. While the standard emission output of the basic system is within the acceptable regional limits, the facility will be improved to achieve the lowest possible emissions.

### **Environmental Improvements:**

SNCR, ESP, SCR (x2), CO catalyst, Limestone injection, Sodium Bicarbonate injection, Solar Thermal Integration, Ash Removal



### CFB and Project Emission Profile of NO<sub>X</sub>

Basic CFB Design (includes SNCR)

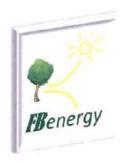
FBenergy initial installation (includes SNCR + SCR)

FBenergy Ongoing Improvements (includes SNCR +SCR +SCR)

Current regional standard 250 TPY NO<sub>v</sub>

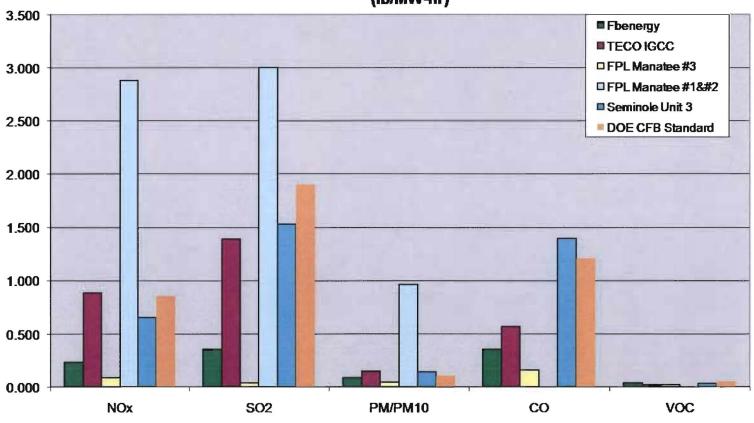
Initial permit (60% below) < 100 TPY NO<sub>√</sub>

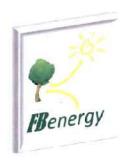
FBenergy emission target < 25 TPY NO<sub>x</sub> (non- attainment)



### Facility Emission Comparison - as initially permitted

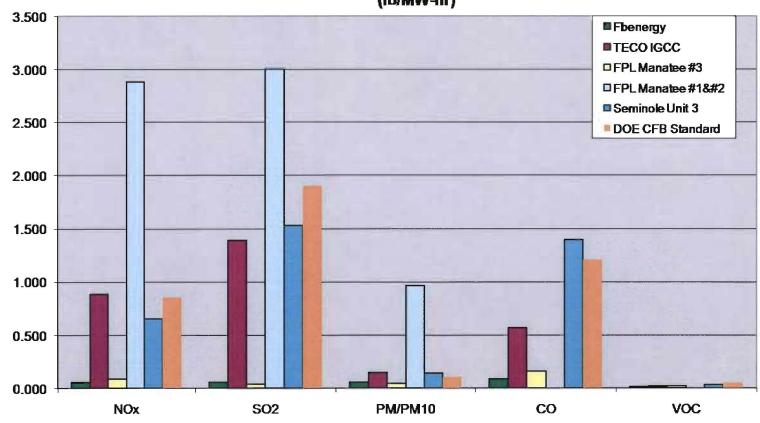
# Generating Technology Emissions Comparison (Ib/MW-hr)





### Facility Emission Comparison – target goal of "non-attainment"

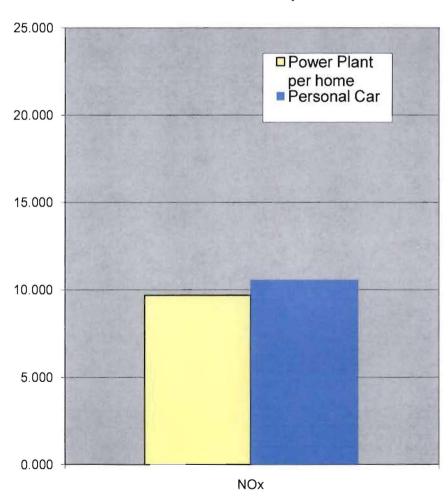
# Generating Technology Emissions Comparison (lb/MW-hr)





### 1 house:1 car

### **NOx Emissions Comparison**



1Car - 1 House
USTB '05 car (properly maintained) = .4 gpm (gram/mile)
12,000 miles/year = 12,000x.4 grams = 4800 grams/year
1 gram = .002204 lb so- 4800 grams/year = 10.579 lbs/year
I car NOx emissions per year = 10.579 lbs

Per household Power Plant Emissions FPL #3 = .083 lb/MW-Hr = .083 for ~ 750 homes per Hr 1 home = .083/750 = .001106 lbs/hr Per year = .001106 x 8760 = 9.69 lbs/year 1 home NOx power plant emissions per year = 9.69 lbs



### **Greenhouse Gases**

Jerry Karnas, Environmental Defense Fund;

"Environmental advocates support biomass technology because it is a renewable, sustainable, carbon-neutral energy source that can reduce the impact of climate change. Carbon-neutral energy from biomass is a critical plank of any effort to break our nation's addiction to fossil fuels and to combat climate change."

Robert Preston, Florida Wildlife Federation;

"We need to diversify our energy supply toward green and cost effective resources other than fossil fuels such as coal, oil and natural gas, because we know that carbon-dioxide emissions are contributing to climate change, and Florida will suffer the most from sea-level rise. Projects that embrace alternative energy sources are the key to a sustainable future."

What the previous comparison slide did not show;

Biomass energy is carbon neutral, which cannot be achieved by any of the fossil fuel facilities shown in the previous comparison slides.

For baseload power for Florida, biomass is the key environmental power resource



### **Community Benefits**

Project will bring new and renewed jobs/job market, economic redevelopment, support of public infrastructure and support of rural communities thru farming

- Construction 150+jobs, \$90,000,000+ in labor, \$55,000,000+ in equipment, \$40,000,000 in taxes, clerical, accounting and other construction services
- ➤ Direct project jobs 25, annual payroll of \$2,800,000+
- Fuel sourcing annual fuel budget of \$8,000,000+ paid to port authority workers, local farmers, trucking industry, local processing support (jobs to provide these services are difficult to estimate but should be several hundred)
- ➤ Local purchases of supplies and consumables \$2,280,000+ annually
- ➤ Local County and State taxes paid annually are estimated at \$2,000,000+
- >Use of local reclaimed water supports conservation of water resources



### **In Summary**

- ➤ Beneficial 24/7 base-load power generated by clean technology using the key environmental resource carbon neutral biomass
- ➤ Will meet all County and State agency regulations thru permitting processes
- Establishes a new standard for biomass power facilities
- ➤ Supports Florida's RPS Renewable Portfolio Standard (needed to reduce fossil fuel use)
- ➤ Replacement power with clean MW means lower nitrogen deposition in the Tampa Bay area
- ➤ Provides significant revenues to the County through taxes, salaries and local expenditures
- ➤ Supports Port Manatee a vital *economic engine* to Manatee County

#### Florida Biomass Energy Overview

#### Overview

Benergy (FBE) is developing in Manatee County, a renewable energy facility to provide 60 Net MW of "green" electricity under a 20 year contract to Progress Energy of Florida. Locally sourced wood waste and farmed energy crops will be used to generate the waste to electricity in Central Florida for the local grid. FBE will use standard, known and reliable Circulating Fluid Bed (CFB) technology and couple it with the best emission equipment available. Redundant and secondary passes through emission equipment will reduce the project emissions greatly setting a new standard for biomass to electricity projects. In addition to financial goals, the environmental goal for this project will be to achieve the lowest greenhouse gas emissions possible as well as being carbon neutral.

*Benergy* has a received a "ready for construction" CFB package from AEE (Austrian Energy and Environmental) and McBurney Construction who are providing a full EPC wrap with technology performance and delivery timeline guarantees. This project will be completely "green" using biodiesel for start-up, avoiding any petroleum based fuels.

With generating green power, plans on exporting renewable wood products out through the port. FBE has received unanimous approval from the Manatee County Commissioners on the Comprehensive Plan land Use change allowing for a power plant and that change has been transmitted to the state. Final zoning and Comp plan change is expected by August (the same commissioners will be voting on this final approval and no reversals are expected).

*Benergy* has met with the County Commissioners to discuss our vision for this project and have received tremendous support. It will bring benefits the Port and County. Every effort will be made to become a positive project for the County and to become a long standing, reputable member of the community. The project intends to use reclaimed water, add jobs, pay county taxes and hopes to support the local community education system at all levels.

**Wenergy** has a <u>PPA term sheet with Progress Energy of Florida</u> and the expected timeline for COD – commercial operations date- is early to mid 2012.

#### Technology

AEE a known and reputable technology company has partnered with a known and respected construction company to provide a Circulating fluidized bed (CFB) boiler, turbine package and all related balance of plant equipment, construction and installation: a complete turnkey facility. AEE founded in 1823 has multiple installations worldwide with operating units of this size providing over 94%-96% availability annually. Benefits of a CFB are best



characterized as a thorough mixing of the fuel into a dense cloud of heated solid particles. This excellent mixing leads to improved heat and material transfer during combustion and low emissions. Use of the CFB ensures:

- An extensive and flexible range of fuels that can be used
- Low emissions
- High system availability levels & long continuous operation periods
- Minimum maintenance costs

Project Site – *Benergy* has the site under a month to month option contract allowing for all zoning, permitting and other required project work to be completed. The total acreage is 53 with approximately 10 (dotted blue area) designated as wetlands which has been left out of the rezoning eliminating any disturbance.. The remaining 43 acres is fully useable for the project. The following site studies have been completed including:

- Environmental Phase I & II,
- Geo-tech.
- Wetlands delineation study completed and certified by SWFMUD,
- Boundaries and Topography
- The site is located in the Manatee County Port Encouragement Zone
- Current available utilities include:
  - Water: 24" Manatee County water line on west ROW of US 41 (adjacent to site)
  - Sewer: 10" Manatee County force main on east ROW of US 41
- Has CSX access and has available an approved CSX siding design and layout



### **Project Fuel**

**Benergy** will stabilize and secure project fuel by;

- FBE has enlisted the services of a Florida based fuel expert who has 17 years of successful fuel identification and acquisition in the central and northern Florida areas. FBE has a commitment from this individual to support FBE's fuel source development and strategy initially as a consultant and depending on the need and contractual relationships this could become fulltime.
- FBE intends to work with a local Sarasota-based company as its main wood fuel supplier initially and has a commitment for 5 years for 100% of the project feedstock needs. This initial period will allow FBE to complete relations and potential growing to secure longer term stable feedstock sources (see below). This is an established company who owns as well as operates for others wood processing yards. This company's business template is to obtain long term contracts which include forest and land management, County and business wood waste disposal, and disaster relief services.

 FBE will also look to contracting with farming partners under long term growing agreements for non-food energy crops. FBE is developing relationships with state universities to identify the best crop types.

The combination of these different activities will provide a stable consistent wood fuel for the facility.

**Permitting** – FBE has completed an initial permitting review with Golder associates its local permitting and has indicated no problems with obtaining the necessary air permits or other required certificates and permissions for this project.

Further, Golder believes that: 1) since the chosen technology is fully engineered, 2) has other currently operating units providing real emission statistics, 3) the technology provider has an strong positive reputation and is providing a "make good" emission performance guarantee, 4) the emission outputs are 60% below the current limits and well below the 100 ton per year level thereby removing any PSD permitting requirements for the project and 5) as most of the required site studies are complete, that the project air permit can be obtained quickly.

# Project supports ARRA 2009 and provides significant County Benefits Benergy believes this facility should be an asset to its home. This means it should be

more than just a financially successful business and FBE is focusing on the objectives listed below:

- Should be Replicable any facility that is truly going to provide long lasting and far reaching benefits to the economy, communities and the labor force has to be commercially sound. This means:
  - The projects econometrics (construction and ongoing operations) can be supported by the private sector financing without causing or forcing increased or artificial costs/rates to municipalities or ratepayers.
- Supports new and renewed jobs/job market, economic redevelopment, support of public infrastructure and support of rural communities thru farming
  - Direct project benefits in jobs and new revenues to the local and extended community;
    - Construction 150+jobs, \$90,000,000+ in labor, \$55,000,000+ in equipment, \$40,000,000 in taxes, clerical, accounting and other construction services
    - Direct project jobs 25, annual payroll of \$2,800,000+
    - Fuel sourcing annual fuel budget of \$8,000,000+ paid to port authority workers, local farmers, trucking industry, local processing support
    - New dollars into the county the power purchase contract will bring significant new revenue through FBE into the county annually.
    - Local purchases of supplies and consumables \$2,280,000+ annually
    - Local County and State taxes paid annually are estimated at \$2,000,000+

- Use of local reclaimed water supports conservation of water resources
- Because of the facilities lower emissions, this project can be built in previously non-viable, emission-challenged regions (called nonattainment regions) bringing these new jobs and revenue benefits to those areas.
- <u>Distributed Energy Program</u>; greater MW output (60) can be delivered in an environmentally and economically sound project.
- Supports and facilitates Renewable Portfolio Standards;
  - o Carbon neutral energy
  - With achieving lower/lowest emissions it will garner the support of environmental groups concerned over air problems.
  - o Torrified wood products will lower coal generated electricity emissions

### Facility - could "shovel ready" by early 2010

This project will become "shovel ready" with the following accomplishments;

- Site Selected
  - o Purchase agreement completed
  - Required studies completed (Environmental Phase I & II, Geo-tech, Certified Wetlands, Boundaries and Topography, etc)
  - Project properly zoned
- Technology selected
  - Initial project design completed
  - Technology company experienced
  - "Make-good" quarantees provided
  - o Project hopes to integrate Solar and Torrifaction into basic plant design
- Construction company selected
  - Construction budget for base biomass project provided
  - o "Make-good" workmanship guarantees provided
- PPA (Power Purchase Agreement) ready
  - o Term sheet signed with Progress Energy of Florida

#### **Timeline**

- Zoning
  - Complete by August 2009
- o DEP
  - Air and other permits target for December 2009
- Construction ground breaking
  - Construction timeline is 20-24 months projected online as early as 1<sup>st</sup> Q 2012

### **Targeted Environmental Benefits and Improvements**

**Benergy** will intends to establish improvements in biomass emissions and efficiencies by looking at the integration possibilities of biomass, solar and torrifaction. FBE believes the combination of these 3 technologies is synergistic and will provide both economic and environment benefits establishing new standards for renewable energy facilities.

<u>Solar</u>: Heat is the direct medium used for producing steam/electricity. The integration solar thermal can provide a low-cost heat source reducing the amount of biomass used during sunlight/daylight hours. In addition to lower feedstock volumes and costs, the emissions footprint of the overall facility will be lowered. This integration reduces operating cost but still provides dependable, base-load electricity

Non-Attainment emissions: The facility technology will be built with an emission guarantee below the 100 tons per year level. (The current standards of the Florida DEP for this area are 250 tons per year of emissions but FBenergy will come in well below them as stated above). Emissions of this level are considered standard and normal for this size electricity facility.

Once operating the additional goals will be pursued:

- To achieve lower emissions then ever realized before from this size system, with the ultimate emission target of reaching a non-attainment emission level. (these are 25 tons per year of emissions - approximately 1/10 of the standard emissions for this size and type system).
- To achieve these lowest emission levels in a financially replicable solution so it can be built commercially at current power pricing and fuels/commodities costs in areas previously not viable due to environmental regulatory limits.

<u>Torrifaction:</u> In addition to lower emission targets, this project will establish the viability of adding a torrifaction facility to make wood products for resale to coal operations. Torrifaction is the process of drying wood/biomass to the point where it becomes charcoal-like, making it usable in current coal operations. Using biomass in coal facilities will lower the emission footprint of existing coal to electricity operations. However existing coal technology does not allow for untreated wood/biomass to be used because the liquids and other constituents in the biomass cause maintenance and operational problems. Once biomass has been torrified it can be treated and used just like coal and existing equipment tolerates it very well.

In addition to creating a resale product, combining torrifaction with this biomass facility can lower feedstock requirements by circulating the gases generated from drying of the biomass and using them to generate heat for electricity production.

### **Project Team**

Energy has put together a development and management team that has the experience required to support and complete the FBenergy Manatee Energy Facility:

- Rick Jensen FBenergy President, Engineer, formerly Sr. VP/director of Development with BG&E, extensive background and experience with construction development, general operations and financial management.
- Ted Hill, Ed Lee and CRR (Consolidated Resource Recovery) Biomass fuel acquisition specialists with a combined 50 years of experience in biomass fuels.
- Virginia Wetherell Permitting, Zoning and State Agency Support Former Florida Legislator and Director of Florida DEP
- Golder Associates Permitting and Site Development Specialists, an employee owned company founded in 1960
  - o Scott Osborne- team leader

- AEE von Roll Technology Partners, founded in 1823, AEE has extensive experience and success with multiple installations operating world-wide
- McBurney Construction Founded in 1911, has comprehensive engineering, construction and maintenance experience in all facets of steam and power plant projects
- Engineering Staff; all members have 20+ years of experience in their respective fields of expertise. The lead engineer has over 30 years of specific CFB experience.
  - o Andrew Grant Lead Engineer
  - o Jonathan Moore Elec. and Controls
  - John Hemingway Project Execution
  - Dan Itse Environmental Systems
  - o Subodh Jain Civil and Structural Design
  - o Bob Devilio Fluid Bed Specialist
- Bluewater Energy Solutions project operators experienced with the specific technology and equipment selected. Bluewater's involvement will begin in the development and construction phase to ensure a smooth transition into operations.
- Patricia Petruff Land use and zoning attorney, local to Manatee County

### **Project Operational Details**

**Wood Fuel**: The total fuel requirement for the site is 1600 wet tons per day. The fuel plan for the project is targeting to bring ½ by rail and ½ by truck. The trucks will be fully loaded with chipped wood. The wood will have been processed offsite and loaded as chips into the trucks.

The trucks during delivery will be covered to prevent spillage (and loss) and assuming 800 tons delivered per day this would be 40 truck loads at 20 tons per truck. There may be period where these actual deliveries vary depending on time of year and wood chips available at each processing location. Additionally as farmed energy crops are accomplished they would be brought in by rail. The likelihood for long term fuel delivers is principally by rail, reducing truck deliveries to minimum levels.

**Staff:** The project will employ approximately 25 individuals and will be a 24/7 operation. While shifts will be 3 a day the maintenance staff will principally be day shift adding a few extra cars during day hours.

**Operating Deliveries**: Most deliveries will be bulk delivers by both truck and rail and will depend on how much local commodity is available. (would like to use local businesses first if possible) Because they are bulk deliveries they will usually be only monthly or quarterly and not be a constant source of traffic.

Water and Water Management: The project is estimated to use 1.2 million Gal per day and would like to use reclaimed water. A one pass system is preferred so concentrations in the water are not built up and all water would be contained and released only into the county sewer system for retreatment. Golder Associates will design and integrate all appropriate and required water management controls to manage runoff, waste water disposition

**Site Dimensions:** The dimensions below are rough but generally outline the base project.

Total design size: 2000' x 800'
Primary Individual Components:
Boiler: 200' x 170'
Cooling tower: 250' x 80'
Turbine/gen: 150' x 80'
Fuel Yard (unload/screening) 500' x 500'
Water Holding(if required): 450' x 450'
Substation (if required) 50' x 200'

**Wetlands:** The site has an approved SWFWMD jurisdictional for property and the designated wetlands in approximately 6+ acres located on the south-end of the property. This wetlands section has been removed from the total acreage requested for a land use Comp plan change and any future zoning changes. The wetlands will be left as is, where is without any alterations/changes. Any required buffer for the wetland will be included in the untouched area. The total estimated untouched area is ~10 acres.

### Gammon, David W

From:

Rick Jensen [rjensen@fbenergy.com] Tuesday, September 15, 2009 9:02 AM

Sent:

To:

Gammon, David W

Subject:

Comercial operations date and execution date confirmation

This email confirms that in the Energy Purchase and Sale Agreement between Florida Biomass Energy LLC and Florida Power Corporation d/b/a Progress Energy Florida, the Stipulated Commercial Operation date is December 31, 2012 and that the Execution Date is July 10, 2009.

### Rick Jensen



9040 Town Center Parkway Bradenton, Fl. 34202 0 - 941-567-1631 C-404-229-8845

### **REDACTED**

Table 1

Comparison of Projected Payments
FB Energy vs. 2008 Standard Offer Contract As Filed
Discount Rate 8.48%
Discount Date 6/30/2009

Capacity
Capacity Factor 60 89%

	(1)	(2)			(3)	(4)		[5)	(6)	(7) (8) (5) + (6)		(9) (10)		(11) (12) (9) + (10)		(13) (7)-(11)	
				Total											(0) - (10)		
	Negotiated	•	•	•	SOC	SOC	Delivery		Negotiated	•	Negotiated	•	SOC	soc	000 T-4-1	SOC	Difference
	Capacity Payments	Energy	Voltage	Energy	Capacity	Energy	Voltage	Energy	Capacity	Energy	Total	Total	Capacity	Energy	SOC Total Payments	Total	Between
Year	\$/kW-mo.	Payments \$/MWh	Adj. \$/MWh	Payments \$/MWh	Payments \$/kW-mo.	Payments \$/MWh	Adj. \$/MWh	Payments \$/MWh	Payments \$000	Payments \$000	Payments \$000	Payment \$/MWh	Payments \$000	Payments \$000	\$000	Payment \$/MWh	Negotiated and SOC
2009	Çikiri kilo.	<b>W</b> /14/4711	Ψ/11/11/11	\$ -	ψ/KTF IIIQ.	Ψ///////	Ψ/101011)	\$ -	<b>4</b> 000	4000	\$ -	ψππππ	4000	4000	\$ -	<b>\$7.557777</b>	\$ -
2010				\$ -				\$ -			\$ -				\$ -		\$ -
2011				\$ -				\$ -			\$ -				\$ -		\$ -
2012				\$ -				\$ -			\$ -				\$ -		\$ -
2013				\$ 71.00	\$ 10.70	\$ 60.48	\$ 1.28	\$ 61.75		\$ 33,215	\$ 33,215	\$ 71.00	\$ 4,494	\$ 28,888	\$ 33,382	\$ 71.36	\$ (167)
2014				\$ 72.07	\$ 11.12	\$ 63.24	\$ 1.33	\$ 64.58		\$ 33,711	\$ 33,711	\$ 72.07	\$ 8,004	\$ 30,208	\$ 38,212	\$ 81.69	\$ (4,501)
2015				\$ 73.15	\$ 11.55	\$ 66.22	\$ 1.40	\$ 67.62		\$ 34,215	\$ 34,215	•	\$ 8,316	\$ 31,633	\$ 39,949	\$ 85.40	\$ (5,734)
2016				\$ 74.24	\$ 12.00	\$ 62.97	\$ 1.33	\$ 64.29		\$ 34,829	\$ 34,829		\$ 8,640	\$ 30,158	\$ 38,798	\$ 82.71	\$ (3,969)
2017				\$ 75.36	\$ 12.47	\$ 59.24	\$ 1.25	\$ 60.49		\$ 35,250	\$ 35,250	•	\$ 8,976	\$ 28,296	\$ 37,272	\$ 79.68	\$ (2,022)
2018				\$ 76.49	\$ 12.95	\$ 60.57	\$ 1.28	\$ 61.85		\$ 35,782	\$ 35,782	•	\$ 9,324	\$ 28,934	\$ 38,258	\$ 81.78	\$ (2,476)
2019				\$ 77.63	\$ 13.47	\$ 61.93	\$ 1.31	\$ 63.24		\$ 36,314	\$ 36,314		\$ 9,696	\$ 29,583	\$ 39,279	\$ 83.97	\$ (2,965)
2020				\$ 78.80	\$ 13.98	\$ 63.33	\$ 1.34	\$ 64.67		\$ 36,966	\$ 36,966	\$ 78.80	\$ 10,068	\$ 30,333	\$ 40,401	\$ 86.13	\$ (3,435)
2021 2022				\$ 79.98 \$ 81.18	\$ 14.53 \$ 15.10	\$ 64.75 \$ 66.21	\$ 1.37 \$ 1.40	\$ 66.12 \$ 67.61		\$ 37,416 \$ 37,972	\$ 37,416 \$ 37,972		\$ 10,464 \$ 10,872	\$ 30,930 \$ 31,626	\$ 41,394 \$ 42,498	\$ 88.49 \$ 90.85	\$ (3,978)
2022				\$ 82.40	\$ 15.70	\$ 67.70	\$ 1.40 \$ 1.43	\$ 69.13		\$ 38,547	\$ 38.547		\$ 10,672	\$ 32,338	\$ 43,642	\$ 90.85 \$ 93.30	\$ (4,526) \$ (5,095)
2024				\$ 83.63	\$ 16.30	\$ 69.22	\$ 1.46	\$ 70.68		\$ 39,233	\$ 39,233	•	\$ 11,736	\$ 33,155	\$ 44.891	\$ 95.70	\$ (5,658)
2025				\$ 84.89	\$ 16.95	\$ 70.78	\$ 1.49	\$ 72.28		\$ 39,713	\$ 39,713		\$ 12,204	\$ 33,811	\$ 46.015	\$ 98.37	\$ (6,302)
2026				\$ 86.16	\$ 17.62	\$ 72.37	\$ 1.53	\$ 73.90		\$ 40,305	\$ 40.305		\$ 12,684	\$ 34,570	\$ 47,254	\$ 101.02	\$ (6,949)
2027				\$ 87.45	\$ 18.30	\$ 74.00	\$ 1.56	\$ 75.57		\$ 40,911	\$ 40,911		\$ 13,176	\$ 35,348	\$ 48.524	\$ 103.73	\$ (7,613)
2028				\$ 88.77	\$ 19.02	\$ 75.67	\$ 1.60	\$ 77.27		\$ 41,640	\$ 41,640		\$ 13,692	\$ 36,243	\$ 49,935	\$ 106.46	\$ (8,295)
2029				\$ 90.10	\$ 19.77	\$ 77.37	\$ 1.63	\$ 79.00		\$ 42,149	\$ 42,149	\$ 90.10	\$ 14,232	\$ 36,957	\$ 51,189	\$ 109.43	\$ (9,040)
2030				\$ 91.45	\$ 20.55	\$ 79.12	\$ 1.67	\$ 80.78		\$ 42,777	\$ 42,777	\$ 91.45	\$ 14,796	\$ 37,790	\$ 52,586	\$ 112.41	\$ (9,809)
2031				\$ 92.82	\$ 21.35	\$ 80.90	\$ 1.71	\$ 82.60		\$ 43,423	\$ 43,423	\$ 92.82	\$ 15,372	\$ 38,640	\$ 54,012	\$ 115.46	\$ (10,589)
2032				\$ 94.21	\$ 22.18	\$ 82.71	\$ 1.75	\$ 84.45		\$ 44,191	\$ 44,191	\$ 94.21	\$ 15,972	\$ 39,615	\$ 55,587	\$ 118.50	\$ (11,396)
Total									\$ -	\$ 768,559	\$768,559		\$224,022	\$659,056	\$883,078		\$(114,519)
NPV									\$ -	\$ 274,171	\$274,171		\$ 73,827	\$234,579	\$308,406		\$ (34,234)

Table 2

Comparison of Projected Payments
FB Energy vs. 2008 Standard Offer Contract at 74% Capacity Factor
Discount Rate 8.48%
Discount Date 6/30/2009

Discount Date
Capacity
Capacity Factor

60 74%

	(1)		(2)		(3)		(4)		(5)	(6)	(7) (5) + (6)	(8)	(9)	(10)	(11) (9) + (10)	(12)	(13) (7)-(11)
				Total							(+) (-)				(-) ()		( ) ( ) )
	Negotiated	Negotiated	Delivery	Negotiated	SOC	SOC	Delivery	Total SOC	Negotiated	Negotiated	Negotiated	Negotiated	SOC	SOC		SOC	Difference
	Capacity	Energy	Voltage	Energy	Capacity	Energy	Voltage	Energy	Capacity	Energy	Total	Total	Capacity	Energy	SOC Total	Total	Between
	Payments	Payments	Adj.	Payments	Payments	Payments	Adj.	Payments	Payments	Payments	Payments	Payment	Payments	•		Payment	Negotiated
Year	\$/kW-mo.	\$/MWh	\$/MWh	\$/MWh	\$/kW-mo.	\$/MWh	\$/MWh	\$/MWh	\$000	\$000	\$000	\$/MWh	\$000	\$000	\$000	\$/MWh	and SOC
2009				\$ -				\$ -			\$ -				\$ -		\$ -
2010				\$ -				\$ -			\$ -				\$ -		\$ -
2011				\$ -				\$ -			\$ -				\$ -		\$ -
2012			ı	\$ -				\$ -			\$ -				\$ -		\$ -
2013				\$ 53.25	\$ 10.70		\$ 1.28	\$ 61.75		\$ 20,710	\$ 20,710		\$ 4,494	\$ 24,017	\$ 28,511	\$ 73.30	\$ (7,801)
2014				\$ 54.05	\$ 11.12		•	\$ 64.58		\$ 21,020	\$ 21,020	\$ 54.05	\$ 8,004	\$ 25,117		\$ 85.16	\$ (12,101)
2015				\$ 54.86	\$ 11.55	\$ 66.23		\$ 67.63		\$ 21,337	\$ 21,337			\$ 26,305	\$ 34,621	\$ 89.01	\$ (13,284)
2016				\$ 55.68 \$ 56.52	\$ 12.00 \$ 12.47	\$ 62.97 \$ 59.24		\$ 64.30 \$ 60.49		\$ 21,714	\$ 21,714 \$ 21,983	1			\$ 33,717	\$ 86.45	\$ (12,003)
2017 2018				\$ 50.32	\$ 12.47		\$ 1.25	\$ 61.85		\$ 21,983 \$ 22,313	\$ 21,963			\$ 23,527 \$ 24,055	\$ 32,503 \$ 33,379	\$ 83.57 \$ 85.82	\$ (10,520) \$ (11,066)
2016				\$ 58.23	\$ 13.47	•	\$ 1.20	\$ 63.25		\$ 22,642	\$ 22,513					\$ 88.17	\$ (11,653)
2019				\$ 59.10	\$ 13.47		\$ 1.34	\$ 64.67		\$ 23,046	\$ 23,046		\$ 10,068	\$ 25,220		\$ 90.48	\$ (12,242)
2020				\$ 59.99	\$ 14.53	\$ 64.75		\$ 66.12		\$ 23,336	\$ 23,336		\$ 10,464			\$ 93.02	\$ (12,845)
2022				\$ 60.89	\$ 15.10	•	\$ 1.40	\$ 67.61		\$ 23,678	\$ 23,678		\$ 10,872			\$ 95.56	\$ (13,490)
2023				\$ 61.80	\$ 15.70		\$ 1.43	\$ 69.13		\$ 24.035		\$ 61.80				\$ 98.19	\$ (14,157)
2024				\$ 62.73	\$ 16.30		•	\$ 70.69		\$ 24,462	\$ 24,462	\$ 62.73		\$ 27,569		\$ 100.78	\$ (14,843)
2025				\$ 63.67	\$ 16.95	\$ 70.78	\$ 1.49	\$ 72.27		\$ 24,761	\$ 24,761	\$ 63.67		\$ 28,111		\$ 103.65	\$ (15,554)
2026				\$ 64.62	\$ 17.62	\$ 72.37	\$ 1.53	\$ 73.90		\$ 25,137	\$ 25,137	\$ 64.62	\$ 12,684			\$ 106.51	\$ (16,290)
2027				\$ 65.59	\$ 18.30	\$ 74.00	\$ 1.56	\$ 75.57		\$ 25,514	\$ 25,514	\$ 65.59	\$ 13,176	\$ 29,391	\$ 42,567	\$ 109.44	\$ (17,053)
2028				\$ 66.57	\$ 19.02	\$ 75.67	\$ 1.60	\$ 77.26		\$ 25,962	\$ 25,962	\$ 66.57	\$ 13,692	\$ 30,134	\$ 43,826	\$ 112.37	\$ (17,864)
2029				\$ 67.57	\$ 19.77	\$ 77.37	\$ 1.63	\$ 79.00		\$ 26,280	\$ 26,280	\$ 67.57	\$ 14,232	\$ 30,728	\$ 44,960	\$ 115.59	\$ (18,680)
2030				\$ 68.59	\$ 20.55	\$ 79.11	\$ 1.67	\$ 80.78		\$ 26,680	\$ 26,680	\$ 68.59	\$ 14,796	\$ 31,420	\$ 46,216	\$ 118.82	\$ (19,536)
2031				\$ 69.62	\$ 21.35	\$ 80.90		\$ 82.60		\$ 27,077	\$ 27,077	\$ 69.62	\$ 15,372	\$ 32,128	\$ 47,500	\$ 122.12	\$ (20,423)
2032				\$ 70.66	\$ 22.18	\$ 82.72	\$ 1.75	\$ 84.46		\$ 27,558	\$ 27,558	\$ 70.66			\$ 48,913	\$ 125.41	\$ (21,355)
Total									\$ -	\$ 479,245	\$479,245		\$224,022	\$547,984	\$772,006		\$(292,761)
NPV									\$ -	\$ 170,961	\$170,961		\$ 73,827	\$195,045	\$268,872		\$ (97,911)

Table 3

Comparison of Projected Payments
FB Energy vs. 2008 Standard Offer Contract and 2009 SOC Fuel Forecast
Discount rate 8.48%

Discount Date

8.48% 6/30/2009

Capacity

60 89% Capacity Factor

	(1)		(2)		(3)		(4)		(5)	(6)	(7) (5) + (6)	(8)	(9)	(10)	(11) (9) + (10)	(12)	(13) (7)-(11)
	Capacity	Negotiated Energy	Voltage	Energy	SOC Capacity	SOC Energy	Delivery Voltage	Energy	Negotiated Capacity Payments	Negotiated Energy Payments	Negotiated Total Payments	Negotiated Total Payment	SOC Capacity Payments	SOC Energy Payments	SOC Total	SOC Total Payment	Difference Between Negotiated
Veer	Payments \$/kW-mo.	Payments \$/MWh	Adj. \$/MWh	Payments \$/MWh	Payments \$/kW-mo.	Payments \$/MWh	Adj. \$/MWh	Payments \$/MWh	\$000	\$000	\$000	\$/MWh	\$000	\$000	\$000	\$/MWh	and SOC
<u>Year</u> 2009	TIKYY-IIIO.	Ø/IVIVVIII	<b>471414411</b>	\$ -	Ψ/ΚΨΨ-1110.	ΨΙΙΤΙΤΙ	Ψιτιντιτ	\$ -	****		\$ -				\$ -		\$ -
2010				<b>Š</b> -				\$ -			\$ -				\$ -		\$ -
2011				\$ -				\$ -			\$ -				\$ -		\$ -
2012				\$ -				\$ -			\$ -				\$ -		\$ -
2013				\$ 71.00	\$ 10.70	\$ 80.79	\$ 1.70	\$ 82.49		\$ 33,215	\$ 33,215	\$ 71.00	\$ 4,494	\$ 38,588	\$ 43,082	\$ 92.10	\$ (9,867)
2014				\$ 72.07	\$ 11.12	\$ 79.76	\$ 1.68	\$ 81.44		\$ 33,711		\$ 72.07	\$ 8,004	\$ 38,097	\$ 46,101	\$ 98.55	\$ (12,390)
2015				\$ 73.15	\$ 11.55		\$ 1.72			,			\$ 8,316	\$ 38,972		\$ 101.09	• • •
2016				\$ 74.24	\$ 12.00	•	\$ 1.67	•			\$ 34,829	\$ 74.24	\$ 8,640	\$ 37,992	\$ 46,632		
2017				\$ 75.36	\$ 12.47		\$ 1.52	-			+,	\$ 75.36	\$ 8,976	\$ 34,439	\$ 43,415	\$ 92.81	\$ (8,165)
2018				\$ 76.49	\$ 12.95	•	\$ 1.53				\$ 35,782		\$ 9,324	\$ 34,548	\$ 43,872	\$ 93.79	\$ (8,090)
2019				\$ 77.63	\$ 13.47	•	\$ 1.55			\$ 36,314		-	\$ 9,696	\$ 35,057		\$ 95.67	\$ (8,439)
2020				\$ 78.80	\$ 13.98		\$ 1.58	\$ 76.56		\$ 36,966	\$ 36,966	-	\$ 10,068	\$ 35,914	\$ 45,982	\$ 98.03	\$ (9,016)
2021				\$ 79.98	\$ 14.53		\$ 1.67	•		,	\$ 37,416	-	\$ 10,464	\$ 37,769	\$ 48,233	\$ 103.11	, , ,
2022				\$ 81.18	\$ 15.10		-			\$ 37,972			\$ 10,872	\$ 39,050		\$ 106.72	,
2023				\$ 82.40	\$ 15.70			\$ 87.35		\$ 38,547		•	\$ 11,304	\$ 40,863	\$ 52,167	\$ 111.52	
2024				\$ 83.63	\$ 16.30		\$ 1.76			\$ 39,233		\$ 83.63	\$ 11,736	\$ 40,020	\$ 51,756	\$ 110.34	
2025				\$ 84.89	\$ 16.95		\$ 1.87			\$ 39,713	\$ 39,713	\$ 84.89	\$ 12,204	\$ 42,248		\$ 116.40	
2026				\$ 86.16	\$ 17.62	,	\$ 1.93	\$ 93.56			\$ 40,305	\$ 86.16	\$ 12,684	\$ 43,765		\$ 120.67	
2027				\$ 87.45	\$ 18.30		\$ 2.05	\$ 99.34		\$ 40,911		\$ 87.45	\$ 13,176	\$ 46,470		\$ 127.51	, , ,
2028				\$ 88.77	\$ 19.02		\$ 2.05	\$ 99.37		\$ 41,640		\$ 88.77	\$ 13,692	\$ 46,610		\$ 128.56	
2029				\$ 90.10	\$ 19.77		\$ 2.10	\$ 101.63		\$ 42,149	\$ 42,149	\$ 90.10	\$ 14,232	\$ 47,543	\$ 61,775	\$ 132.06	
2030				\$ 91.45	\$ 20.55		\$ 2.15	-		\$ 42,777	\$ 42,777	\$ 91.45	\$ 14,796	\$ 48,613	\$ 63,409	\$ 135.55	
2031				\$ 92.82	\$ 21.35		\$ 2.20	-		\$ 43,423	\$ 43,423	\$ 92.82	\$ 15,372	\$ 49,705	\$ 65,077	\$ 139.12	
2032				\$ 94.21	\$ 22.18	\$ 106.37	\$ 2.24	\$ 108.61		\$ 44,191	\$ 44,191	\$ 94.21	\$ 15,972	\$ 50,948	\$ 66,920	\$ 142.67	,
Total									\$ -	\$ 768,559	\$768,559		\$224,022	\$827,214	\$1,051,236		\$(282,677)
NPV									\$ -	\$ 274,171	\$274,171		\$ 73,827	\$293,248	\$ 367,074		\$ (92,903)

Table 4

Comparison of Projected Payments
FB Energy vs. 2009 Standard Offer Contract
Discount rate 8.48%
Discount Date 6/30/2009

60 89% Capacity Capacity Factor

	(1)	(2)			(3)		(4)		(5)	(6)	(7) (5) + (6)	(8)	(9)	(10)	(11) (9) + (10)	(12)	(13) (7)-(11)
Year	Negotiated Capacity Payments \$/kW-mo.	Negotiated Energy Payments \$/MWh	Delivery Voltage Adj. \$/MWh	Total Negotiated Energy Payments \$/MWh	SOC Capacity Payments \$/kW-mo.	SOC Energy Payments \$/MWh	Delivery Voltage Adj. \$/MWh	Total SOC Energy Payments \$/MWh	Negotiated Capacity Payments \$000	Negotiated Energy Payments \$000		Negotiated Total Payment \$/MWh	SOC Capacity Payments \$000	SOC Energy Payments \$000	SOC Total Payments \$000	SOC Total Payment \$/MWh	Difference Between Negotiated and SOC
2009 2010 2011	•	•		\$ - \$ - \$ -				\$ - \$ - \$ -			\$ - \$ - \$ -				\$ - \$ -		\$ - \$ - \$ -
2012 2013 2014 2015				\$ 71.00 \$ 72.07 \$ 73.15	\$ - \$ 9.55 \$ 9.92	\$ 83.63 \$ 82.11 \$ 85.18	\$ 1.76 \$ 1.73 \$ 1.80	\$ 85.39 \$ 83.85 \$ 86.97		\$ 33,215 \$ 33,711 \$ 34,215	\$ 33,215 \$ 33,711 \$ 34,215	\$ 71.00 \$ 72.07 \$ 73.15	\$ - \$ 4,011 \$ 7,140	\$ 39,946 \$ 39,222 \$ 40,685	\$ 39,946 \$ 43,233 \$ 47,825	\$ 85.39 \$ 92.42 \$ 102.24	\$ (6,731) \$ (9,522) \$ (13,610)
2016 2017 2018				\$ 74.24 \$ 75.36 \$ 76.49	\$ 10.28 \$ 10.68 \$ 11.10	•	\$ 1.67	\$ 80.99 \$ 73.62		\$ 34,829 \$ 35,250	\$ 34,829 \$ 35,250 \$ 35,782	\$ 74.24 \$ 75.36 \$ 76.49	\$ 7,404 \$ 7,692 \$ 7,992	\$ 37,992 \$ 34,439 \$ 34,548	\$ 45,396 \$ 42,131 \$ 42,540	\$ 96.78 \$ 90.06 \$ 90.94	\$ (10,567) \$ (6,881)
2019 2020 2021				\$ 77.63 \$ 78.80 \$ 79.98	\$ 11.52 \$ 11.97 \$ 12.42	\$ 73.39 \$ 74.98 \$ 79.07	\$ 1.55 \$ 1.58 \$ 1.67	\$ 76.56 \$ 80.74		\$ 36,314 \$ 36,966 \$ 37,416	\$ 36,966 \$ 37,416	\$ 77.63 \$ 78.80 \$ 79.98	\$ 8,292 \$ 8,616 \$ 8,940	\$ 35,057 \$ 35,914 \$ 37,769	\$ 43,349 \$ 44,530 \$ 46,709	\$ 92.67 \$ 94.93 \$ 99.85	\$ (7,035) \$ (7,564) \$ (9,293)
2022 2023 2024				\$ 81.18 \$ 82.40 \$ 83.63	\$ 12.90 \$ 13.40 \$ 13.92		\$ 1.72 \$ 1.81 \$ 1.76			\$ 37,972 \$ 38,547 \$ 39,233 \$ 39,713	\$ 37,972 \$ 38,547 \$ 39,233 \$ 39,713	\$ 81.18 \$ 82.40 \$ 83.63 \$ 84.89	\$ 9,288 \$ 9,648 \$ 10,020 \$ 10,404	\$ 39,050 \$ 40,863 \$ 40,020 \$ 42,248	\$ 48,338 \$ 50,511 \$ 50,040 \$ 52,652	\$ 103.33 \$ 107.98 \$ 106.68 \$ 112.56	\$ (10,366) \$ (11,964) \$ (10,807) \$ (12,939)
2025 2026 2027 2028				\$ 84.89 \$ 86.16 \$ 87.45 \$ 88.77	\$ 14.45 \$ 15.00 \$ 15.58 \$ 16.18	\$ 88.45 \$ 91.63 \$ 97.35 \$ 97.31	\$ 1.87 \$ 1.93 \$ 2.05 \$ 2.05	\$ 90.31 \$ 93.56 \$ 99.40 \$ 99.37			\$ 40,305 \$ 40,911	\$ 86.16 \$ 87.45 \$ 88.77	\$ 10,404 \$ 10,800 \$ 11,220 \$ 11.652	\$ 43,765 \$ 46,498 \$ 46,610	\$ 54,565 \$ 57,718 \$ 58,262	\$ 116.65 \$ 123.38 \$ 124.21	\$ (12,939) \$ (14,260) \$ (16,807) \$ (16,622)
2029 2030 2031				\$ 90.10 \$ 91.45 \$ 92.82	\$ 16.82 \$ 17.47 \$ 18.13	\$ 99.53 \$ 101.77 \$ 104.06	\$ 2.10 \$ 2.15 \$ 2.20	\$ 101.63 \$ 103.92		\$ 42,149 \$ 42,777 \$ 43,423	\$ 42,149 \$ 42,777	\$ 90.10 \$ 91.45 \$ 92.82	\$ 12,108 \$ 12,576 \$ 13,056	\$ 47,543 \$ 48,613 \$ 49,705	\$ 59,651 \$ 61,189 \$ 62,761	\$ 127.52 \$ 130.80 \$ 134.17	\$ (18,412) \$ (19,338)
2032 Total NPV				\$ 94.21	\$ 18.83	\$ 106.37	\$ 2.24	\$ 108.61		\$ 44,191 \$ 768,559 \$ 274,171		\$ 94.21	\$ 13,560 \$184,419 \$ 58,402	,	\$ 64,508 \$1,015,856 \$ 354,436	\$ 137.52	\$ (20,317) \$(247,297) \$ (80,265)
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