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August 18, 2010

VIA HAND DELIVERY

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

REDACTED

Re: *Petition for approval of negotiated purchase power contract with Hathaway Renewable Energy, Inc. by Progress Energy Florida, Inc.; Docket No. 100345-EQ*

Petition for approval of second negotiated purchase power contract with Hathaway Renewable Energy, Inc. by Progress Energy Florida, Inc.; Docket No. 100346-EQ

Petition for approval of third negotiated purchase power contract with Hathaway Renewable Energy, Inc. by Progress Energy Florida, Inc.; Docket No. 100347-EQ

Dear Ms. Cole:

Please find enclosed for filing on behalf of Progress Energy Florida, Inc. ("PEF") the original and five (5) copies of PEF's responses to Staff's Data Request No. 1 in the above referenced dockets. Please post these responses in each of the dockets noted above.

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

Sincerely,

John T. Burnett cms
John T. Burnett

COM _____
APA _____
ECR 1 _____
GCL 2 _____
RAD 2 _____
SSC _____ cc: Hathaway Renewable Energy
ADM _____
OPC _____
CLK _____

DOCUMENT NUMBER
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PROGRESS ENERGY FLORIDA, INC.'S RESPONSES TO STAFF DATA REQUEST NO. 1
DOCKET NOS. 100345-EQ, 100346-EQ, 100347-EQ

Note: The responses below reflect all dockets noted above unless stated otherwise.

Q1. Please indicate which State Hathaway was organized in and where it is registered to do business.

Hathaway Response: Hathaway Renewable Energy, Inc. was organized in the State of Tennessee and is registered to do business in Florida, North Carolina, and Alabama.

Q2. How many employees does Hathaway currently employ in Florida?

Hathaway Response: Hathaway is a startup renewable energy company. Currently there are no employees in the State of Florida; however, consultants and engineering firms are supporting startup efforts with front-end analyses. Hathaway estimates that the number of Florida residents in support of the front-end work does not exceed six full time persons.

Q3. Please complete the table describing all facility projects which Hathaway has developed, constructed, operated or maintained.

Hathaway Response: Hathaway is a startup renewable energy company. As such, we have not yet developed, constructed, operated or maintained any power facilities. However, we are developing a team of some of the best professionals in the power industry to develop, construct, operate and maintain the proposed facilities. We are in the process of contracting with a "marquee" Engineering, Procurement and Construction (EPC) firm like Shaw Group, or similar. It is important to note that the approach we are proposing to very cleanly and efficiently produce power, which is very much in line with the current Administration's Clean and Renewable Energy Vision, uses cutting edge technology that no other power company or engineering firm has employed. The point being, there are no known developers or EPC companies that have ever developed, constructed, operated or maintained plants like the ones being proposed.

The project requires vision and leadership which is something that Kevin Hathaway has demonstrated in nearly twenty years of developing, constructing operating and maintaining defense weapons systems for the US Army. A veteran of using "first of a kind" technology in the development of projects like the Aviation Combined Arms Tactical Trainer (AVCATT), or in the development of the production line for the RAH-66 Comanche Armed Reconnaissance Helicopter, or in the support to the National Capital Region (NCR) Integrated Air Defense System (IADS), Kevin Hathaway has a proven track

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record of working closely with scientists and engineers as well as construction firms to apply new technologies to solve complex problems.

Q4. Please identify any delays in construction experienced by above-referenced projects.

Hathaway Response: The defense projects mentioned above were very well thought out and budgeted and were therefore executed without delays. They were all finished on time and on budget with the exception of a very few minor subsystems that did not affect the overall “rollout” of the capability. Hathaway will use Earned Value Management (EVM) metrics to measure the project performance. EVM is a system in which a baseline schedule and baseline budget is established and each task is allocated resources against the baseline. With the completion of each task, the project manager has a measurement against the baseline and can take corrective actions to fix a small “out of bed” situation before it manifests into a “train wreck.”

Q5. Please identify and discuss, if any, projects(s) which Hathaway contracted for with regard to the development, construction, operation or maintenance of an electric generator but did not complete.

Hathaway Response: Hathaway is a startup renewable energy company and has never left a project incomplete.

Q6. Has Hathaway obtained a fuel supply contract for this proposed project?

- a) If so, with whom?
- b) What is the duration of this contract?

Hathaway Response: Hathaway has not yet obtained fuel supply contracts for the proposed projects. The revolutionary Hathaway plants are nearly 50% efficient, versus the industry standard of 30%, so our process requires less woody biomass per MWh generated than our competitors. Further, when woody biomass is compared to all other sources of renewable feedstock, it is in the largest supply and has the lowest cost per BTU than any other renewable fuel. Lastly, we are confident that woody biomass feedstock will be readily available for our plants because it is very abundant in the forms of pulpwood, forest residue, sawmill residue, and urban wood waste. However, in the unlikely event that woody biomass should become scarce, we are confident that because of the efficiency of our plants we will be in position to pay more for the feedstock than the competition and therefore meet our power production commitments.

Feedstock availability has the largest influence on where we would locate a plant. Hathaway is currently in the final stage of site selection for the prospective power

plants. As part of the search for prospective locations we have identified over one dozen locations, all of which are near enough feedstock to provide an adequate source of fuel. The amount of fuel required for each plant is approximately [REDACTED], which can easily be sourced within a fifty mile radius of a plant location. The three locations that are standout are [REDACTED]. In addition to working with economic development professionals within each county to identify sources of woody biomass, we are in discussions with [REDACTED] that has indicated a willingness to meet our shortfall requirements for woody biomass.

Q7. What is Hathaway Renewable Energy, Inc.'s timeline to purchase the equipment intended for this project?

Hathaway Response: The primary pieces of equipment required for the projects are the gasifier and the Solid Oxide Fuel Cell (SOFC). [REDACTED] will supply eight 30TPD gasifiers to each plant. Funding is expected to be applied to the purchase of those gasifiers in the February 2011 time frame when detailed engineering is complete. Likewise the SOFCs will be ordered and funding applied in the February 2011 time frame. February 2011 is approximately 22 months prior to the capacity commencement date for the first plant which we call HRE #1. The SOFCs shall be procured from [REDACTED]. All other components of the plant: feedstock handling, syngas cleanup, boilers and steam turbines, balance of plant, shall be procured through the EPC contractor.

Q8. Will Hathaway outsource any of its contracted obligations, such as engineering, procurement, and construction of the proposed facilities? If yes, please identify the entity that will provide these services.

Hathaway Response: Hathaway does plan to outsource EPC responsibilities to a very competent firm. We are currently in discussions with [REDACTED] and we are looking for other "marquee" EPC firms that are comfortable working with new technologies. It is a prerequisite from our financing company that the construction of the plant be bonded, which is the driver behind obtaining a highly qualified EPC firm. It is worth mentioning that the reason Hathaway is proposing three plants is to make the opportunity attractive for an EPC company. Most large EPC firms would not take on a "one off" opportunity. Further, since we are proposing innovative technology, there will be significant engineering costs that need to be spread across three plants to make the profit models work.

Q9. Has Hathaway obtained any financing for the proposed project? If so, please explain.

Hathaway Response: Hathaway has engaged a firm to raise 100% of the project funding through a bond offering. The firm is currently conducting due diligence on the project and should issue a letter of high confidence soon. Funding will be contingent upon the issuance of a construction bond, which will likely drive the critical path. We expect the detailed engineering work to be completed in January 2011, that a construction bond will be secured soon after, and that funds will be available in the February 2011 time frame.

Of significance, this project qualifies for the US Treasury Section 1603 Grant in lieu of tax credits. From the 2009 American Reinvestment and Renewal Act (ARRA), the US Treasury "SHALL" provide a grant in the amount of \$3000/kW to qualified fuel cell technologies that meet the application requirements. We intend to meet those requirements and to obtain available grant proceeds which represent two-thirds of the project cost, and are payable within 60 days of the capacity commencement date.

Q10. How many new jobs would be created in Florida during the construction and operation phase of the proposed facilities?

Hathaway Response: We estimate that construction will take six months to complete. There will be various types of tradesmen employed throughout the construction of the facilities. We estimate there will be the equivalent of thirty tradesmen working full-time over the six month period to construct each plant. This would amount to forty-five person years of employment during the construction phase.

We estimate that each plant will employ approximately twenty-five full-time employees required to manage feedstock and to operate each plant at 94% capacity. These jobs will provide a compensation/benefit package necessary to attract and retain the most skilled and proactive blue collar employees. In addition, we expect that each plant will generate the need for five forestry companies to employ a crew of six employees to deliver the necessary woody biomass. The total direct employment impact resulting from the development of the proposed plants would approximate fifty-five jobs per plant, with an estimated \$2.5MM in annual pay and benefits per plant.

Q11. Please describe Hathaway's experience with facilities that utilize fuel cell/CT technology.

Hathaway Response: Hathaway is a startup company that has no experience with facilities that utilize fuel cell/CT technology. However, there are no known companies in the United States with this experience. Hathaway will rely upon the very close relationship established with Ztek Corporation and Dr. Michael Hsu, who holds many of the technology patents used by Ztek. Ztek has been developing the Solid Oxide Fuel Cell

(SOFC) technology for over twenty years and is currently building a 100MW+ SOFC plant in Asia that is fueled by natural gas. Ztek is also working closely with a developer in California that is building a SOFC plant that is fired by natural gas. The three SOFC plants proposed for the PEF service area differ from the ones currently being supplied by Ztek in that we propose to use syngas. The SOFC is essentially a reactor vessel and can flexibly use the syngas in lieu of the natural gas with only a 30% decrease in power output. The SOFC plants proposed by Hathaway will be the first to use syngas and therefore both Hathaway and Ztek are fully invested, confident, and highly motivated to make the approach work.

Q12. Using the identical parameters assumed in Exhibit B of the petition filing, please complete the table provided, adjusted to compare payments to Hathaway Biomass under Contract 1 to PEF's 2010 Standard Offer Contract.

PEF Response:

Contract #1 (100345): Please see Attachment A. The spreadsheet also contains the NPV formula assumptions used for those calculations.

Contract #2 (100346): Please see Attachment B. The spreadsheet also contains the NPV formula assumptions used for those calculations.

Contract #3 (100347): Please see Attachment C. The spreadsheet also contains the NPV formula assumptions used for those calculations.

Q13. Please discuss PEF's method for calculating Net Present Value (NPV) for the contract with Hathaway. Please include equations used and assumptions made. Additionally, include discount rates utilized for each year.

PEF Response:

Contract #1 (100345): Please see Attachment D. The spreadsheet also contains the NPV formula assumptions used for those calculations.

Contract #2 (100346): Please see Attachment E. The spreadsheet also contains the NPV formula assumptions used for those calculations.

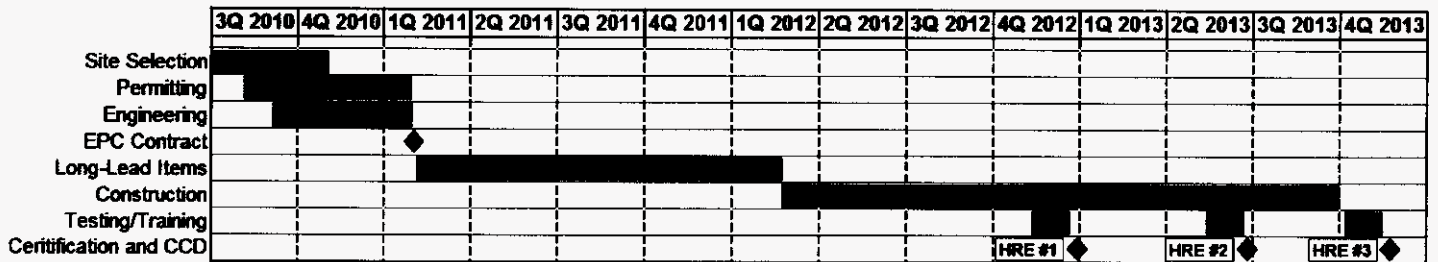
Contract #3 (100347): Please see Attachment F. The spreadsheet also contains the NPV formula assumptions used for those calculations.

Q14. Please explain on what basis PEF assumed a 94% capacity factor in calculating annual energy production.

PEF Response: The pricing in this contract is based on PEF's 2009 Standard Offer Contract which requires the supplier to maintain a minimum of a 94% capacity factor to receive the full capacity payment. Hathaway has assured PEF that they anticipate operating at a capacity factor of at least 94% and receive 100% of the capacity payment.

Q15. Please provide the path schedule/timeline for permitting and construction of each proposed facility. In your answer, please include all critical deadlines, including but not limited to: Land Acquisition, Zoning, Permitting (such as those relating to Zoning, Construction, or Water Use), Construction, Testing, Transmission, and Delivery of Capacity, and identify any events that have been completed.

Hathaway Response:



Q16. On Page 2 of the petition, PEF states that it used the 2010 Ten Year Site Plan fuel forecast to calculate the NPV for the contract. For the years 2020 through 2038, what forecasted fuel prices did PEF use to calculate the NPV? Please explain.

PEF Response: PEF meant to say that it used the 2009 Ten Year Site Plan fuel forecast to calculate the NPV for this project, on page 2 of the petition filing. The 2009 TYSP forecasted prices as shown in the table below, were used for the analysis including years 2020 through 2038. PEF has included the forecasted data for both the 2010 and 2009 Ten Year Site Plans.

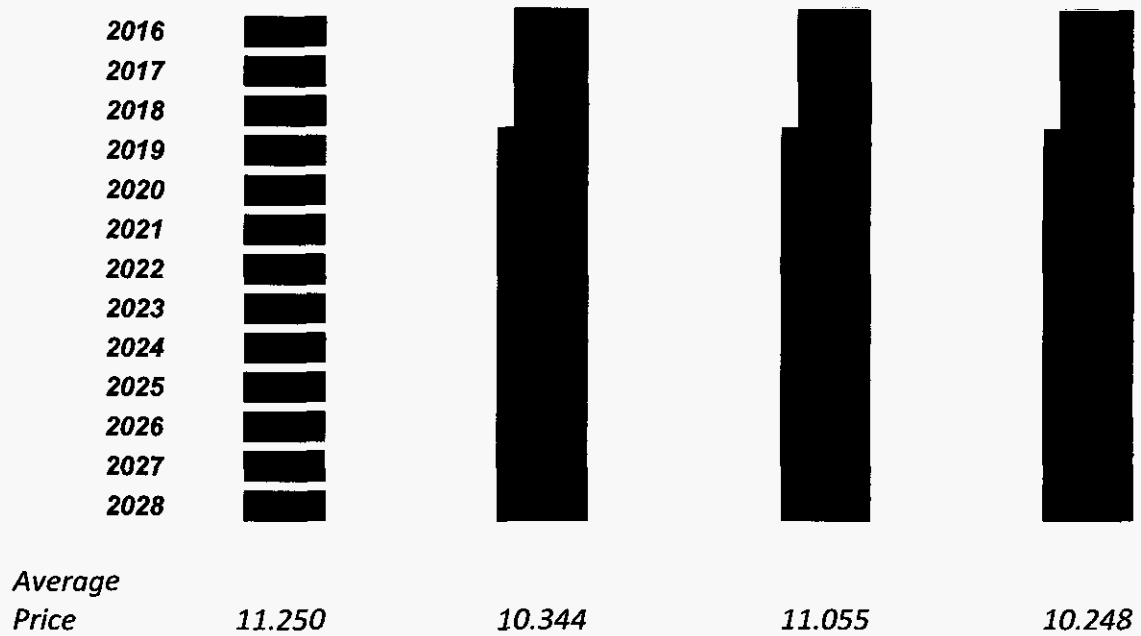
	2010 TYSP Energy		2009 TYSP	
	Delivered Gas \$/MMBtu	As-Available Energy \$/MWh	Delivered Gas \$/MMBtu	As-Available Energy \$/MWh
2013	█	\$68.47	█	\$83.56
2014	█	\$71.45	█	\$82.04
2015	█	\$82.88	█	\$85.10
2016	█	\$86.58	█	\$79.29
2017	█	\$92.96	█	\$72.06

2018		\$98.44		\$72.30
2019		\$94.26		\$73.35
2020		\$90.18		\$74.95
2021		\$87.01		\$79.00
2022		\$90.41		\$81.71
2023		\$94.32		\$85.50
2024		\$104.29		\$83.52
2025		\$108.65		\$88.39
2026		\$111.57		\$91.56
2027		\$119.13		\$97.28
2028		\$118.20		\$97.26
2029		\$121.63		\$99.45
2030		\$125.28		\$101.69
2031		\$129.04		\$103.97
2032		\$132.91		\$106.31
2033		\$136.90		\$108.70
2034		\$141.01		\$111.15
2035		\$145.24		\$113.65
2036		\$149.59		\$116.21
2037		\$154.08		\$118.82
2038		\$158.70		\$121.50

Q17. Please explain why PEF believes that the fuel price forecast used to calculate the NPV of the contract is reasonable.

PEF Response: Forecasts of volatile commodities like natural gas change frequently. This can be seen by looking at four forecasts of natural gas over approximately 14-months, provided by PIRA below. In these forecasts, the average price fluctuated up and down. For consistency, PEF uses the fuel and As-Available energy forecast used in the applicable Ten Year Site Plan (that defines the associated avoided unit) throughout the year when evaluating renewable purchases. Negotiated contracts can take months to finalize and during that time, the forecast of natural gas may change. It may even change more than once during negotiations. If PEF reverted to the latest natural gas forecast during multi-month long negotiations, then the negotiations and analysis would have to restart each time a new gas forecast became available; and, it would be inconsistent with the applicable Ten Year Site Plan and defined avoided unit. To elaborate, if a different fuel forecast had been used in the applicable Ten Year Site Plan analysis, then it is possible, that a different avoided unit may have emerged from that planning process. Therefore, it is reasonable, consistent and necessary to use the fuel forecast that was used and established the avoided unit, when evaluating the cost of QF contracts against the cost of that same avoided unit.

PIRA	8/27/08	2/24/2009	8/19/2009	10/21/2009
2012				
2013				
2014				
2015				



Q18. (Docket 100345) At the time the petition for Contract 1 was filed, the location for the proposed facility was not yet established. Will the filings for Contract 2 and Contract 3 affect the projected fuel costs in this docket, and if so, please explain how this has been accounted for in the projected costs overall.

Hathaway Response: We treat all three projects as stand-alone and therefore each project must have enough feedstock within trucking distance (a 50 mile radius) to operate. We will require approximately [REDACTED]. Locations of plants will be largely influenced by the availability of adequate feedstock, followed by environmental and transmission considerations. We are currently considering over twelve well qualified locations. We are using the worst case cost of feedstock in our pro forma projections for each of these locations.

PEF Response: If the Staff was referring to the contractual fuel cost rather than the cost of Hathaway’s fuel, then the contractual fuel cost is based on a natural gas index or PEF’s cost of fuel as incorporated in the as available energy forecast. Regarding the as available energy costs, neither of these contractual costs will have a major affect on the other Hathaway contracts due to the size of the contracts.

(Docket 100346) At the time the petition for Contract 2 was filed, the location for the proposed facility was not yet established. Will the filings for Contract 1 and Contract 3 affect the projected fuel costs in this docket, and if so, please explain how this has been accounted for in the projected costs overall.

Answer: Please see responses above.

(Docket 100347) At the time the petition for Contract 3 was filed, the location for the proposed facility was not yet established. Will the filings for Contract 1 and Contract 2 affect the projected fuel costs in this docket, and if so, please explain how this has been accounted for in the projected costs overall.

Answer: Please see responses above.

Q19. Please describe any events that may delay or accelerate key milestones that determine the commercial in-service date of the proposed facilities.

Hathaway Response: Hathaway plans to execute its current plan on schedule and at cost. We have slack built-in to the schedule that can be used to workaroud project delays. We have budgeted a 10% management reserve to account for "unknown unknowns." However, some key milestones that could cause significant delay would all involve government regulation and permitting. We plan to work very closely with all Progress Energy Florida and all governmental agencies involved in the oversight of the projects to doubly ensure that all government regulatory requirements are met or exceeded. We do not plan to bring the plants online ahead of the contracted in-service dates because our plant will operate less profitably until July 1, 2014, when the avoided cost structure is implemented.

Q20. Please provide a comparison of the contract NPVs using prices 15% above and 15% below the fuel price forecast used by PEF for the contract.

PEF Response:

NPV of Payments to Hathaway with Sensitivities
NPV

(\$000)	Base -As Filed	+15%	-15%
Contract 1	\$ 119,945	\$ 135,019	\$ 104,876
Contract 2	\$ 117,478	\$ 132,138	\$ 102,812
Contract 3	\$ 113,778	\$ 127,853	\$ 99,701

The +/-15% was applied to the forecasted energy prices to ensure 25-17.0832(5)(b) compliance.

Q21. Describe in further detail the security provisions of this contract that will protect PEF ratepayers if Hathaway fails to perform.

PEF Response: The security provisions will provide PEF funds to cover some of the costs to secure replacement capacity in the event that Hathaway defaults.

Q22. Please explain the reasoning determining the specific amount of Letter of Credit security required to be maintained by the Seller. Please explain why this amount is reasonable.

PEF Response: PEF's Standard Offer security amounts were revised in 2010 because capacity prices had changed over the 3 years since the last review. During this revision, guidelines on the security amounts and the calculation methodology were analyzed. The methodology is reasonable where it provides PEF's Corporate Credit Department guidance to more closely match the utility's actual power purchase costs during the construction period and bringing the avoided unit on line, as a result of a renewable energy facility default. Guidelines for the security amounts use average avoided unit capacity costs (those costs which would have to be incurred to secure power in the event of a renewable resource default) and take into account the amount of unsecured credit which would be granted to a company based on their creditworthiness.

Q23. Please provide information, if any, of greenhouse gas emission monitoring methods and annual projections of these emissions for the requested facility.

Hathaway Response: The approach being proposed for the projects involve technologies that mostly rely upon thermal electric reaction to produce power. Only 30% of the total power produced will result from a combustion reaction. It is in the combustion reaction that GHGs are developed (NOx, and CO2). Because of the very small reliance on combustion, the total emissions from the power generation process will contain very little NOx, and will be net CO2 negative. In fact, we estimate that for every MWh generated, the power generation process will remove approximately 1,100 lbs. of CO2 from the atmosphere, or approximately one half of a carbon credit. Monitoring CO2 emissions and originating Voluntary Carbon Units (VCUs) through the Voluntary Carbon Standard (www.v-c-s.org) is a significant part of our profit model.

Q24. Please provide a copy of all contracts outsourcing engineering, procurement and construction of the proposed facility, if any.

Hathaway Response: Hathaway is currently in negotiations with two EPC firms to conduct the analyses that will lead to EPC Contracts. It will require a 6-month, \$750K effort to conduct the top level, then the detailed engineering work necessary for an EPC firm to 1) commit to an EPC contract, and 2) provide a performance bond. We expect to enter into an EPC contract with a highly reputable firm in February 2011.

Q25. Please provide a complete copy of the fuel price forecast used to calculate the NPV for the entire term of the contract.

PEF Response: Please see Question 16.

Q26. Please provide any documentation supporting Question 22.

PEF Response: Please see Attachment G.

Q27. Please provide any documentation supporting Question 23.

Hathaway Response: Hathaway has no supporting documentation to provide at this time.

Comparison of Payments to Hathaway Biomass Under Contract 1 to PEF's 2010 Standard Offer

Contract MW: 16
 Capacity Factor: 94%
 PV Date: 6/30/10
 Discount Rate: 8.10%

\$000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	# of Months	Contract Energy MWh	Contract Capacity Payments \$	Contract Energy Payments \$	(3) + (4) Contract Energy & Capacity Payments \$	Contract Cumulative Payments \$	Avoided Capacity Payments \$	Avoided Energy Payments \$	(7) + (8) Avoided Energy & Capacity Payments \$	Avoided Cumulative Payments \$	(9) - (5) Difference from Contract \$	(10) - (6) Cumulative Difference from Contract \$	Discount Factor
Units													
Year													
2010	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.000
2011	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.925
2012	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.856
2013	12	131,753	\$ 2,237	\$ 9,215	\$ 11,452	\$ 11,452	\$ -	\$ 9,215	\$ 9,215	\$ 9,215	\$ (2,237)	\$ (2,237)	0.792
2014	12	131,753	\$ 2,237	\$ 9,617	\$ 11,854	\$ 23,306	\$ -	\$ 9,617	\$ 9,617	\$ 18,832	\$ (2,237)	\$ (4,474)	0.732
2015	12	131,753	\$ 2,237	\$ 11,155	\$ 13,392	\$ 36,698	\$ -	\$ 11,155	\$ 11,155	\$ 29,987	\$ (2,237)	\$ (6,711)	0.677
2016	12	132,114	\$ 2,237	\$ 11,685	\$ 13,922	\$ 50,620	\$ -	\$ 11,685	\$ 11,685	\$ 41,672	\$ (2,237)	\$ (8,948)	0.627
2017	12	131,753	\$ 2,237	\$ 12,514	\$ 14,751	\$ 65,371	\$ -	\$ 12,514	\$ 12,514	\$ 54,186	\$ (2,237)	\$ (11,185)	0.580
2018	12	131,753	\$ 2,237	\$ 13,253	\$ 15,490	\$ 80,861	\$ 679	\$ 13,253	\$ 13,932	\$ 68,118	\$ (1,558)	\$ (12,743)	0.536
2019	12	131,753	\$ 2,237	\$ 12,681	\$ 14,918	\$ 95,779	\$ 1,200	\$ 12,681	\$ 13,881	\$ 81,999	\$ (1,037)	\$ (13,780)	0.496
2020	12	132,114	\$ 2,237	\$ 12,165	\$ 14,402	\$ 110,181	\$ 1,236	\$ 12,165	\$ 13,401	\$ 95,400	\$ (1,001)	\$ (14,781)	0.459
2021	12	131,753	\$ 2,237	\$ 11,707	\$ 13,944	\$ 124,125	\$ 1,272	\$ 11,707	\$ 12,979	\$ 108,379	\$ (965)	\$ (15,746)	0.424
2022	12	131,753	\$ 2,237	\$ 12,167	\$ 14,404	\$ 138,529	\$ 1,308	\$ 12,167	\$ 13,475	\$ 121,854	\$ (929)	\$ (16,675)	0.393
2023	12	131,753	\$ 2,237	\$ 12,692	\$ 14,929	\$ 153,458	\$ 1,344	\$ 12,692	\$ 14,036	\$ 135,890	\$ (893)	\$ (17,568)	0.363
2024	12	132,114	\$ 2,237	\$ 14,070	\$ 16,307	\$ 169,765	\$ 1,380	\$ 14,070	\$ 15,450	\$ 151,340	\$ (857)	\$ (18,425)	0.336
2025	12	131,753	\$ 2,237	\$ 14,622	\$ 16,859	\$ 186,624	\$ 1,428	\$ 14,622	\$ 16,050	\$ 167,390	\$ (809)	\$ (19,234)	0.311
2026	12	131,753	\$ 2,237	\$ 15,023	\$ 17,260	\$ 203,884	\$ 1,464	\$ 15,023	\$ 16,487	\$ 183,877	\$ (773)	\$ (20,007)	0.288
2027	12	131,753	\$ 2,237	\$ 16,035	\$ 18,272	\$ 222,156	\$ 1,512	\$ 16,035	\$ 17,547	\$ 201,424	\$ (725)	\$ (20,732)	0.266
2028	12	132,114	\$ 2,237	\$ 15,950	\$ 18,187	\$ 240,343	\$ 1,548	\$ 15,950	\$ 17,498	\$ 218,922	\$ (689)	\$ (21,421)	0.246
2029	12	131,753	\$ 2,237	\$ 16,365	\$ 18,602	\$ 258,945	\$ 1,596	\$ 16,365	\$ 17,961	\$ 236,883	\$ (641)	\$ (22,062)	0.228
2030	12	131,753	\$ 2,237	\$ 16,857	\$ 19,094	\$ 278,039	\$ 1,644	\$ 16,857	\$ 18,501	\$ 255,384	\$ (593)	\$ (22,655)	0.211
2031	12	131,753	\$ 2,237	\$ 17,362	\$ 19,599	\$ 297,638	\$ 1,692	\$ 17,362	\$ 19,054	\$ 274,438	\$ (545)	\$ (23,200)	0.195
2032	12	132,114	\$ 2,237	\$ 17,923	\$ 20,160	\$ 317,798	\$ 1,740	\$ 17,923	\$ 19,663	\$ 294,101	\$ (497)	\$ (23,697)	0.180
2033	12	131,753	\$ 2,237	\$ 18,419	\$ 20,656	\$ 338,454	\$ 1,800	\$ 18,419	\$ 20,219	\$ 314,320	\$ (437)	\$ (24,134)	0.167
2034	12	131,753	\$ 2,237	\$ 18,972	\$ 21,209	\$ 359,663	\$ 1,848	\$ 18,972	\$ 20,820	\$ 335,140	\$ (389)	\$ (24,523)	0.154
2035	12	131,753	\$ 2,237	\$ 19,542	\$ 21,779	\$ 381,442	\$ 1,896	\$ 19,542	\$ 21,438	\$ 356,578	\$ (341)	\$ (24,864)	0.143
2036	12	132,114	\$ 2,237	\$ 20,173	\$ 22,410	\$ 403,852	\$ 1,956	\$ 20,173	\$ 22,129	\$ 378,707	\$ (281)	\$ (25,145)	0.132
2037	12	131,753	\$ 2,237	\$ 20,732	\$ 22,969	\$ 426,821	\$ 2,016	\$ 20,732	\$ 22,748	\$ 401,455	\$ (221)	\$ (25,366)	0.122
2038	0	-	\$ -	\$ -	\$ -	\$ 426,821	\$ -	\$ -	\$ -	\$ 401,455	\$ -	\$ (25,366)	0.113
Total	300	3,295,991	\$ 55,925	\$ 370,896	\$ 426,821		\$ 30,559	\$ 370,896	\$ 401,455		\$ (25,366)		
NPV 2010\$			\$ 20,257	\$ 119,441	\$ 139,698		\$ 7,891	\$ 119,441	\$ 127,332		\$ (12,366)		

Comparison of Payments to Hathaway Biomass Under Contract 2 to PEF's 2010 Standard Offer

Contract MW: 16
 Capacity Factor: 94%
 PV Date: 6/30/10
 Discount Rate: 8.10%

\$000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	# of Months	Contract Energy MWh	Contract Capacity Payments \$	Contract Energy Payments \$	(3) + (4) Contract Energy & Capacity Payments \$	Contract Cumulative Payments \$	Avoided Capacity Payments \$	Avoided Energy Payments \$	(7) + (8) Avoided Energy & Capacity Payments \$	Avoided Cumulative Payments \$	(9) - (5) Difference from Contract \$	(10) - (6) Cumulative Difference from Contract \$	Discount Factor
Units		MWh	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Year													
2010	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.000
2011	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.925
2012	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.856
2013	7	77,247	\$ 1,366	\$ 5,691	\$ 7,057	\$ 7,057	\$ -	\$ 5,691	\$ 5,691	\$ 5,691	\$ (1,366)	\$ (1,366)	0.792
2014	12	131,753	\$ 2,342	\$ 9,617	\$ 11,959	\$ 19,016	\$ -	\$ 9,617	\$ 9,617	\$ 15,308	\$ (2,342)	\$ (3,708)	0.732
2015	12	131,753	\$ 2,342	\$ 11,155	\$ 13,497	\$ 32,513	\$ -	\$ 11,155	\$ 11,155	\$ 26,463	\$ (2,342)	\$ (6,050)	0.677
2016	12	132,114	\$ 2,342	\$ 11,685	\$ 14,027	\$ 46,540	\$ -	\$ 11,685	\$ 11,685	\$ 38,148	\$ (2,342)	\$ (8,392)	0.627
2017	12	131,753	\$ 2,342	\$ 12,514	\$ 14,856	\$ 61,396	\$ -	\$ 12,514	\$ 12,514	\$ 50,662	\$ (2,342)	\$ (10,734)	0.580
2018	12	131,753	\$ 2,342	\$ 13,253	\$ 15,595	\$ 76,991	\$ 679	\$ 13,253	\$ 13,932	\$ 64,594	\$ (1,663)	\$ (12,397)	0.536
2019	12	131,753	\$ 2,342	\$ 12,681	\$ 15,023	\$ 92,014	\$ 1,200	\$ 12,681	\$ 13,881	\$ 78,475	\$ (1,142)	\$ (13,539)	0.496
2020	12	132,114	\$ 2,342	\$ 12,165	\$ 14,507	\$ 106,521	\$ 1,236	\$ 12,165	\$ 13,401	\$ 91,876	\$ (1,106)	\$ (14,645)	0.459
2021	12	131,753	\$ 2,342	\$ 11,707	\$ 14,049	\$ 120,570	\$ 1,272	\$ 11,707	\$ 12,979	\$ 104,855	\$ (1,070)	\$ (15,715)	0.424
2022	12	131,753	\$ 2,342	\$ 12,167	\$ 14,509	\$ 135,079	\$ 1,308	\$ 12,167	\$ 13,475	\$ 118,330	\$ (1,034)	\$ (16,749)	0.393
2023	12	131,753	\$ 2,342	\$ 12,692	\$ 15,034	\$ 150,113	\$ 1,344	\$ 12,692	\$ 14,036	\$ 132,366	\$ (998)	\$ (17,747)	0.363
2024	12	132,114	\$ 2,342	\$ 14,070	\$ 16,412	\$ 166,525	\$ 1,380	\$ 14,070	\$ 15,450	\$ 147,816	\$ (962)	\$ (18,709)	0.336
2025	12	131,753	\$ 2,342	\$ 14,622	\$ 16,964	\$ 183,489	\$ 1,428	\$ 14,622	\$ 16,050	\$ 163,866	\$ (914)	\$ (19,623)	0.311
2026	12	131,753	\$ 2,342	\$ 15,023	\$ 17,365	\$ 200,854	\$ 1,464	\$ 15,023	\$ 16,487	\$ 180,353	\$ (878)	\$ (20,501)	0.288
2027	12	131,753	\$ 2,342	\$ 16,035	\$ 18,377	\$ 219,231	\$ 1,512	\$ 16,035	\$ 17,547	\$ 197,900	\$ (830)	\$ (21,331)	0.266
2028	12	132,114	\$ 2,342	\$ 15,950	\$ 18,292	\$ 237,523	\$ 1,548	\$ 15,950	\$ 17,498	\$ 215,398	\$ (794)	\$ (22,125)	0.246
2029	12	131,753	\$ 2,342	\$ 16,365	\$ 18,707	\$ 256,230	\$ 1,596	\$ 16,365	\$ 17,961	\$ 233,359	\$ (746)	\$ (22,871)	0.228
2030	12	131,753	\$ 2,342	\$ 16,857	\$ 19,199	\$ 275,429	\$ 1,644	\$ 16,857	\$ 18,501	\$ 251,860	\$ (698)	\$ (23,569)	0.211
2031	12	131,753	\$ 2,342	\$ 17,362	\$ 19,704	\$ 295,133	\$ 1,692	\$ 17,362	\$ 19,054	\$ 270,914	\$ (650)	\$ (24,219)	0.195
2032	12	132,114	\$ 2,342	\$ 17,923	\$ 20,265	\$ 315,398	\$ 1,740	\$ 17,923	\$ 19,663	\$ 290,577	\$ (602)	\$ (24,821)	0.180
2033	12	131,753	\$ 2,342	\$ 18,419	\$ 20,761	\$ 336,159	\$ 1,800	\$ 18,419	\$ 20,219	\$ 310,796	\$ (542)	\$ (25,363)	0.167
2034	12	131,753	\$ 2,342	\$ 18,972	\$ 21,314	\$ 357,473	\$ 1,848	\$ 18,972	\$ 20,820	\$ 331,616	\$ (494)	\$ (25,857)	0.154
2035	12	131,753	\$ 2,342	\$ 19,542	\$ 21,884	\$ 379,357	\$ 1,896	\$ 19,542	\$ 21,438	\$ 353,054	\$ (446)	\$ (26,303)	0.143
2036	12	132,114	\$ 2,342	\$ 20,173	\$ 22,515	\$ 401,872	\$ 1,956	\$ 20,173	\$ 22,129	\$ 375,183	\$ (386)	\$ (26,689)	0.132
2037	12	131,753	\$ 2,342	\$ 20,732	\$ 23,074	\$ 424,946	\$ 2,016	\$ 20,732	\$ 22,748	\$ 397,931	\$ (326)	\$ (27,015)	0.122
2038	5	54,506	\$ 976	\$ 7,803	\$ 8,779	\$ 433,725	\$ 865	\$ 7,803	\$ 8,668	\$ 406,599	\$ (111)	\$ (27,126)	0.113
Total	300	3,295,991	\$ 58,550	\$ 375,175	\$ 433,725		\$ 31,424	\$ 375,175	\$ 406,599		\$ (27,126)		
NPV 2010\$			\$ 20,546	\$ 117,532	\$ 138,078		\$ 7,989	\$ 117,532	\$ 125,521		\$ (12,557)		

Comparison of Payments to Hathaway Biomass Under Contract 3 to PEF's 2010 Standard Offer

Contract MW: 16
 Capacity Factor: 94%
 PV Date 6/30/10
 Discount Rate 8.10%

\$000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	# of Months	Contract Energy MWh	Contract Capacity Payments \$	Contract Energy Payments \$	Contract Energy & Capacity Payments \$	Contract Cumulative Payments \$	Avoided Capacity Payments \$	Avoided Energy Payments \$	Avoided Energy & Capacity Payments \$	Avoided Cumulative Payments \$	(9) - (5) Difference from Contract \$	(10) - (6) Cumulative Difference from Contract \$	Discount Factor
Units		MWh	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Year													
2010	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.000
2011	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.925
2012	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.856
2013	1	11,190	\$ 206	\$ 661	\$ 867	\$ 867	\$ -	\$ 661	\$ 661	\$ 661	\$ (206)	\$ (206)	0.792
2014	12	131,753	\$ 2,467	\$ 9,617	\$ 12,084	\$ 12,951	\$ -	\$ 9,617	\$ 9,617	\$ 10,278	\$ (2,467)	\$ (2,673)	0.732
2015	12	131,753	\$ 2,467	\$ 11,155	\$ 13,622	\$ 26,573	\$ -	\$ 11,155	\$ 11,155	\$ 21,433	\$ (2,467)	\$ (5,140)	0.677
2016	12	132,114	\$ 2,467	\$ 11,685	\$ 14,152	\$ 40,725	\$ -	\$ 11,685	\$ 11,685	\$ 33,118	\$ (2,467)	\$ (7,607)	0.627
2017	12	131,753	\$ 2,467	\$ 12,514	\$ 14,981	\$ 55,706	\$ -	\$ 12,514	\$ 12,514	\$ 45,632	\$ (2,467)	\$ (10,074)	0.580
2018	12	131,753	\$ 2,467	\$ 13,253	\$ 15,720	\$ 71,426	\$ 679	\$ 13,253	\$ 13,932	\$ 59,564	\$ (1,788)	\$ (11,862)	0.536
2019	12	131,753	\$ 2,467	\$ 12,681	\$ 15,148	\$ 86,574	\$ 1,200	\$ 12,681	\$ 13,881	\$ 73,445	\$ (1,267)	\$ (13,129)	0.496
2020	12	132,114	\$ 2,467	\$ 12,165	\$ 14,632	\$ 101,206	\$ 1,236	\$ 12,165	\$ 13,401	\$ 86,846	\$ (1,231)	\$ (14,360)	0.459
2021	12	131,753	\$ 2,467	\$ 11,707	\$ 14,174	\$ 115,380	\$ 1,272	\$ 11,707	\$ 12,979	\$ 99,825	\$ (1,195)	\$ (15,555)	0.424
2022	12	131,753	\$ 2,467	\$ 12,167	\$ 14,634	\$ 130,014	\$ 1,308	\$ 12,167	\$ 13,475	\$ 113,300	\$ (1,159)	\$ (16,714)	0.393
2023	12	131,753	\$ 2,467	\$ 12,692	\$ 15,159	\$ 145,173	\$ 1,344	\$ 12,692	\$ 14,036	\$ 127,336	\$ (1,123)	\$ (17,837)	0.363
2024	12	132,114	\$ 2,467	\$ 14,070	\$ 16,537	\$ 161,710	\$ 1,380	\$ 14,070	\$ 15,450	\$ 142,786	\$ (1,087)	\$ (18,924)	0.336
2025	12	131,753	\$ 2,467	\$ 14,622	\$ 17,089	\$ 178,799	\$ 1,428	\$ 14,622	\$ 16,050	\$ 158,836	\$ (1,039)	\$ (19,963)	0.311
2026	12	131,753	\$ 2,467	\$ 15,023	\$ 17,490	\$ 196,289	\$ 1,464	\$ 15,023	\$ 16,487	\$ 175,323	\$ (1,003)	\$ (20,966)	0.288
2027	12	131,753	\$ 2,467	\$ 16,035	\$ 18,502	\$ 214,791	\$ 1,512	\$ 16,035	\$ 17,547	\$ 192,870	\$ (955)	\$ (21,921)	0.266
2028	12	132,114	\$ 2,467	\$ 15,950	\$ 18,417	\$ 233,208	\$ 1,548	\$ 15,950	\$ 17,498	\$ 210,368	\$ (919)	\$ (22,840)	0.246
2029	12	131,753	\$ 2,467	\$ 16,365	\$ 18,832	\$ 252,040	\$ 1,596	\$ 16,365	\$ 17,961	\$ 228,329	\$ (871)	\$ (23,711)	0.228
2030	12	131,753	\$ 2,467	\$ 16,857	\$ 19,324	\$ 271,364	\$ 1,644	\$ 16,857	\$ 18,501	\$ 246,830	\$ (823)	\$ (24,534)	0.211
2031	12	131,753	\$ 2,467	\$ 17,362	\$ 19,829	\$ 291,193	\$ 1,692	\$ 17,362	\$ 19,054	\$ 265,884	\$ (775)	\$ (25,309)	0.195
2032	12	132,114	\$ 2,467	\$ 17,923	\$ 20,390	\$ 311,583	\$ 1,740	\$ 17,923	\$ 19,663	\$ 285,547	\$ (727)	\$ (26,036)	0.180
2033	12	131,753	\$ 2,467	\$ 18,419	\$ 20,886	\$ 332,469	\$ 1,800	\$ 18,419	\$ 20,219	\$ 305,766	\$ (667)	\$ (26,703)	0.167
2034	12	131,753	\$ 2,467	\$ 18,972	\$ 21,439	\$ 353,908	\$ 1,848	\$ 18,972	\$ 20,820	\$ 326,586	\$ (619)	\$ (27,322)	0.154
2035	12	131,753	\$ 2,467	\$ 19,542	\$ 22,009	\$ 375,917	\$ 1,896	\$ 19,542	\$ 21,438	\$ 348,024	\$ (571)	\$ (27,893)	0.143
2036	12	132,114	\$ 2,467	\$ 20,173	\$ 22,640	\$ 398,557	\$ 1,956	\$ 20,173	\$ 22,129	\$ 370,153	\$ (511)	\$ (28,404)	0.132
2037	12	131,753	\$ 2,467	\$ 20,732	\$ 23,199	\$ 421,756	\$ 2,016	\$ 20,732	\$ 22,748	\$ 392,901	\$ (451)	\$ (28,855)	0.122
2038	11	120,563	\$ 2,262	\$ 19,714	\$ 21,976	\$ 443,732	\$ 1,903	\$ 19,714	\$ 22,617	\$ 414,518	\$ (359)	\$ (29,214)	0.113
Total	300	3,295,991	\$ 61,676	\$ 382,056	\$ 443,732		\$ 32,462	\$ 382,056	\$ 414,518		\$ (29,214)		
NPV 2010\$			\$ 20,806	\$ 114,895	\$ 135,701		\$ 8,106	\$ 114,895	\$ 123,002		\$ (12,700)		

Comparison of Payments to Hathaway Biomass Under Contract 1 to PEF's 2009 Standard Offer

Contract MW: 16
 Capacity Factor: 94%
 PV Date: 6/30/10
 Discount Rate: 8.48%

\$000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	# of Months	Contract Energy MWh	Contract Capacity Payments \$	Contract Energy Payments \$	(3) + (4) Contract Energy & Capacity Payments \$	Contract Cumulative Payments \$	Avoided Capacity Payments \$	Avoided Energy Payments \$	(7) + (8) Avoided Energy & Capacity Payments \$	Avoided Cumulative Payments \$	(9) - (5) Difference from Contract \$	(10) - (6) Cumulative Difference from Contract \$	Discount Factor
Units													
Year													
2010	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.000
2011	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.922
2012	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.850
2013	12	131,753	\$ 2,237	\$ 11,252	\$ 13,488	\$ 13,488	\$ -	\$ 11,252	\$ 11,252	\$ 11,252	\$ (2,237)	\$ (2,237)	0.783
2014	12	131,753	\$ 2,237	\$ 11,047	\$ 13,284	\$ 26,772	\$ 1,069	\$ 11,047	\$ 12,116	\$ 23,367	\$ (1,168)	\$ (3,405)	0.722
2015	12	131,753	\$ 2,237	\$ 11,459	\$ 13,696	\$ 40,468	\$ 1,902	\$ 11,459	\$ 13,361	\$ 36,729	\$ (334)	\$ (3,739)	0.666
2016	12	132,114	\$ 2,237	\$ 10,701	\$ 12,938	\$ 53,405	\$ 1,975	\$ 10,701	\$ 12,676	\$ 49,405	\$ (261)	\$ (4,000)	0.613
2017	12	131,753	\$ 2,237	\$ 9,700	\$ 11,936	\$ 65,341	\$ 2,051	\$ 9,700	\$ 11,751	\$ 61,155	\$ (186)	\$ (4,186)	0.565
2018	12	131,753	\$ 2,237	\$ 9,730	\$ 11,967	\$ 77,308	\$ 2,130	\$ 9,730	\$ 11,860	\$ 73,015	\$ (107)	\$ (4,293)	0.521
2019	12	131,753	\$ 2,237	\$ 9,874	\$ 12,111	\$ 89,419	\$ 2,212	\$ 9,874	\$ 12,086	\$ 85,101	\$ (25)	\$ (4,318)	0.480
2020	12	132,114	\$ 2,237	\$ 10,115	\$ 12,352	\$ 101,771	\$ 2,297	\$ 10,115	\$ 12,411	\$ 97,512	\$ 60	\$ (4,259)	0.443
2021	12	131,753	\$ 2,237	\$ 10,637	\$ 12,874	\$ 114,645	\$ 2,385	\$ 10,637	\$ 13,022	\$ 110,534	\$ 148	\$ (4,111)	0.408
2022	12	131,753	\$ 2,237	\$ 10,998	\$ 13,235	\$ 127,880	\$ 2,477	\$ 10,998	\$ 13,475	\$ 124,009	\$ 240	\$ (3,871)	0.376
2023	12	131,753	\$ 2,237	\$ 11,509	\$ 13,746	\$ 141,626	\$ 2,572	\$ 11,509	\$ 14,081	\$ 138,090	\$ 335	\$ (3,536)	0.347
2024	12	132,114	\$ 2,237	\$ 11,272	\$ 13,508	\$ 155,134	\$ 2,671	\$ 11,272	\$ 13,942	\$ 152,032	\$ 434	\$ (3,102)	0.320
2025	12	131,753	\$ 2,237	\$ 11,899	\$ 14,136	\$ 169,270	\$ 2,774	\$ 11,899	\$ 14,673	\$ 166,705	\$ 537	\$ (2,565)	0.295
2026	12	131,753	\$ 2,237	\$ 12,326	\$ 14,563	\$ 183,833	\$ 2,881	\$ 12,326	\$ 15,207	\$ 181,912	\$ 644	\$ (1,921)	0.272
2027	12	131,753	\$ 2,237	\$ 13,096	\$ 15,333	\$ 199,166	\$ 2,992	\$ 13,096	\$ 16,088	\$ 198,000	\$ 755	\$ (1,166)	0.250
2028	12	132,114	\$ 2,237	\$ 13,127	\$ 15,364	\$ 214,530	\$ 3,107	\$ 13,127	\$ 16,235	\$ 214,235	\$ 871	\$ (295)	0.231
2029	12	131,753	\$ 2,237	\$ 13,390	\$ 15,627	\$ 230,158	\$ 3,227	\$ 13,390	\$ 16,618	\$ 230,853	\$ 991	\$ 695	0.213
2030	12	131,753	\$ 2,237	\$ 13,692	\$ 15,929	\$ 246,086	\$ 3,352	\$ 13,692	\$ 17,044	\$ 247,897	\$ 1,115	\$ 1,810	0.196
2031	12	131,753	\$ 2,237	\$ 14,000	\$ 16,237	\$ 262,323	\$ 3,482	\$ 14,000	\$ 17,481	\$ 265,378	\$ 1,245	\$ 3,055	0.181
2032	12	132,114	\$ 2,237	\$ 14,349	\$ 16,586	\$ 278,909	\$ 3,616	\$ 14,349	\$ 17,966	\$ 283,344	\$ 1,380	\$ 4,435	0.167
2033	12	131,753	\$ 2,237	\$ 14,637	\$ 16,874	\$ 295,783	\$ 3,756	\$ 14,637	\$ 18,393	\$ 301,737	\$ 1,519	\$ 5,954	0.154
2034	12	131,753	\$ 2,237	\$ 14,966	\$ 17,203	\$ 312,986	\$ 3,902	\$ 14,966	\$ 18,868	\$ 320,605	\$ 1,665	\$ 7,619	0.142
2035	12	131,753	\$ 2,237	\$ 15,303	\$ 17,540	\$ 330,525	\$ 4,053	\$ 15,303	\$ 19,356	\$ 339,961	\$ 1,816	\$ 9,435	0.131
2036	12	132,114	\$ 2,237	\$ 15,685	\$ 17,922	\$ 348,447	\$ 4,210	\$ 15,685	\$ 19,895	\$ 359,856	\$ 1,973	\$ 11,409	0.120
2037	12	131,753	\$ 2,237	\$ 15,999	\$ 18,236	\$ 366,683	\$ 4,373	\$ 15,999	\$ 20,373	\$ 380,228	\$ 2,137	\$ 13,545	0.111
2038	0	-	\$ -	\$ -	\$ -	\$ 366,683	\$ -	\$ -	\$ -	\$ 380,228	\$ -	\$ 13,545	0.102
Total	300	3,295,991	\$ 55,920	\$ 310,763	\$ 366,683		\$ 69,465	\$ 310,763	\$ 380,228		\$ 13,545		
NPV 2010\$			\$ 19,472	\$ 100,473	\$ 119,945		\$ 19,541	\$ 100,473	\$ 120,014		\$ 69		

Comparison of Payments to Hathaway Biomass Under Contract 2 to PEF's 2009 Standard Offer

Contract MW: 16
 Capacity Factor: 94%
 PV Date: 6/30/10
 Discount Rate: 8.48%

\$000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	# of Months	Contract Energy MWh	Contract Capacity Payments \$	Contract Energy Payments \$	(3) + (4) Contract Energy & Capacity Payments \$	Contract Cumulative Payments \$	Avoided Capacity Payments \$	Avoided Energy Payments \$	(7) + (8) Avoided Energy & Capacity Payments \$	Avoided Cumulative Payments \$	(9) - (5) Difference from Contract \$	(10) - (6) Cumulative Difference from Contract \$	Discount Factor
Units		MWh	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Year													
2010	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.000
2011	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.922
2012	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.850
2013	7	77,247	\$ 1,366	\$ 6,953	\$ 8,319	\$ 8,319	\$ -	\$ 6,953	\$ 6,953	\$ 6,953	\$ (1,366)	\$ (1,366)	0.783
2014	12	131,753	\$ 2,342	\$ 11,047	\$ 13,389	\$ 21,709	\$ 1,069	\$ 11,047	\$ 12,116	\$ 19,069	\$ (1,274)	\$ (2,640)	0.722
2015	12	131,753	\$ 2,342	\$ 11,459	\$ 13,801	\$ 35,510	\$ 1,902	\$ 11,459	\$ 13,361	\$ 32,430	\$ (440)	\$ (3,080)	0.666
2016	12	132,114	\$ 2,342	\$ 10,701	\$ 13,043	\$ 48,553	\$ 1,975	\$ 10,701	\$ 12,676	\$ 45,106	\$ (367)	\$ (3,447)	0.613
2017	12	131,753	\$ 2,342	\$ 9,700	\$ 12,042	\$ 60,595	\$ 2,051	\$ 9,700	\$ 11,751	\$ 56,857	\$ (291)	\$ (3,738)	0.565
2018	12	131,753	\$ 2,342	\$ 9,730	\$ 12,072	\$ 72,667	\$ 2,130	\$ 9,730	\$ 11,860	\$ 68,716	\$ (213)	\$ (3,951)	0.521
2019	12	131,753	\$ 2,342	\$ 9,874	\$ 12,217	\$ 84,884	\$ 2,212	\$ 9,874	\$ 12,086	\$ 80,802	\$ (131)	\$ (4,082)	0.480
2020	12	132,114	\$ 2,342	\$ 10,115	\$ 12,457	\$ 97,341	\$ 2,297	\$ 10,115	\$ 12,411	\$ 93,214	\$ (46)	\$ (4,127)	0.443
2021	12	131,753	\$ 2,342	\$ 10,637	\$ 12,980	\$ 110,321	\$ 2,385	\$ 10,637	\$ 13,022	\$ 106,236	\$ 42	\$ (4,085)	0.408
2022	12	131,753	\$ 2,342	\$ 10,998	\$ 13,341	\$ 123,662	\$ 2,477	\$ 10,998	\$ 13,475	\$ 119,711	\$ 134	\$ (3,951)	0.376
2023	12	131,753	\$ 2,342	\$ 11,509	\$ 13,851	\$ 137,513	\$ 2,572	\$ 11,509	\$ 14,081	\$ 133,791	\$ 229	\$ (3,722)	0.347
2024	12	132,114	\$ 2,342	\$ 11,272	\$ 13,614	\$ 151,127	\$ 2,671	\$ 11,272	\$ 13,942	\$ 147,734	\$ 328	\$ (3,393)	0.320
2025	12	131,753	\$ 2,342	\$ 11,899	\$ 14,241	\$ 165,368	\$ 2,774	\$ 11,899	\$ 14,673	\$ 162,406	\$ 431	\$ (2,962)	0.295
2026	12	131,753	\$ 2,342	\$ 12,326	\$ 14,669	\$ 180,037	\$ 2,881	\$ 12,326	\$ 15,207	\$ 177,613	\$ 538	\$ (2,423)	0.272
2027	12	131,753	\$ 2,342	\$ 13,096	\$ 15,439	\$ 195,476	\$ 2,992	\$ 13,096	\$ 16,088	\$ 193,702	\$ 649	\$ (1,774)	0.250
2028	12	132,114	\$ 2,342	\$ 13,127	\$ 15,470	\$ 210,945	\$ 3,107	\$ 13,127	\$ 16,235	\$ 209,936	\$ 765	\$ (1,009)	0.231
2029	12	131,753	\$ 2,342	\$ 13,390	\$ 15,733	\$ 226,678	\$ 3,227	\$ 13,390	\$ 16,618	\$ 226,554	\$ 885	\$ (124)	0.213
2030	12	131,753	\$ 2,342	\$ 13,692	\$ 16,034	\$ 242,712	\$ 3,352	\$ 13,692	\$ 17,044	\$ 243,598	\$ 1,010	\$ 886	0.196
2031	12	131,753	\$ 2,342	\$ 14,000	\$ 16,342	\$ 259,055	\$ 3,482	\$ 14,000	\$ 17,481	\$ 261,079	\$ 1,139	\$ 2,025	0.181
2032	12	132,114	\$ 2,342	\$ 14,349	\$ 16,692	\$ 275,746	\$ 3,616	\$ 14,349	\$ 17,966	\$ 279,045	\$ 1,274	\$ 3,299	0.167
2033	12	131,753	\$ 2,342	\$ 14,637	\$ 16,979	\$ 292,726	\$ 3,756	\$ 14,637	\$ 18,393	\$ 297,438	\$ 1,414	\$ 4,713	0.154
2034	12	131,753	\$ 2,342	\$ 14,966	\$ 17,309	\$ 310,034	\$ 3,902	\$ 14,966	\$ 18,868	\$ 316,306	\$ 1,559	\$ 6,272	0.142
2035	12	131,753	\$ 2,342	\$ 15,303	\$ 17,645	\$ 327,680	\$ 4,053	\$ 15,303	\$ 19,356	\$ 335,662	\$ 1,711	\$ 7,982	0.131
2036	12	132,114	\$ 2,342	\$ 15,685	\$ 18,027	\$ 345,707	\$ 4,210	\$ 15,685	\$ 19,895	\$ 355,557	\$ 1,868	\$ 9,850	0.120
2037	12	131,753	\$ 2,342	\$ 15,999	\$ 18,342	\$ 364,049	\$ 4,373	\$ 15,999	\$ 20,373	\$ 375,930	\$ 2,031	\$ 11,881	0.111
2038	5	54,506	\$ 976	\$ 6,306	\$ 7,282	\$ 371,331	\$ 1,893	\$ 6,306	\$ 8,199	\$ 384,129	\$ 917	\$ 12,798	0.102
Total	300	3,295,991	\$ 58,560	\$ 312,771	\$ 371,331		\$ 71,358	\$ 312,771	\$ 384,129		\$ 12,798		
NPV 2010\$			\$ 19,727	\$ 97,751	\$ 117,478		\$ 19,735	\$ 97,751	\$ 117,486		\$ 8		

Comparison of Payments to Hathaway Biomass Under Contract 3 to PEF's 2009 Standard Offer

Contract MW: 16
 Capacity Factor: 94%
 PV Date 6/30/10
 Discount Rate 8.48%

\$000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	# of Months	Contract Energy MWh	Contract Capacity Payments \$	Contract Energy Payments \$	(3) + (4) Contract Energy & Capacity Payments \$	Contract Cumulative Payments \$	Avoided Capacity Payments \$	Avoided Energy Payments \$	(7) + (8) Avoided Energy & Capacity Payments \$	Avoided Cumulative Payments \$	(9) - (5) Difference from Contract \$	(10) - (6) Cumulative Difference from Contract \$	Discount Factor
Units													
Year													
2010	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.000
2011	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.922
2012	0	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.850
2013	1	11,190	\$ 206	\$ 827	\$ 1,033	\$ 1,033	\$ -	\$ 827	\$ 827	\$ 827	\$ (206)	\$ (206)	0.783
2014	12	131,753	\$ 2,467	\$ 11,047	\$ 13,514	\$ 14,547	\$ 1,069	\$ 11,047	\$ 12,116	\$ 12,943	\$ (1,398)	\$ (1,604)	0.722
2015	12	131,753	\$ 2,467	\$ 11,459	\$ 13,926	\$ 28,473	\$ 1,902	\$ 11,459	\$ 13,361	\$ 26,304	\$ (565)	\$ (2,169)	0.666
2016	12	132,114	\$ 2,467	\$ 10,701	\$ 13,168	\$ 41,641	\$ 1,975	\$ 10,701	\$ 12,676	\$ 38,980	\$ (492)	\$ (2,660)	0.613
2017	12	131,753	\$ 2,467	\$ 9,700	\$ 12,167	\$ 53,807	\$ 2,051	\$ 9,700	\$ 11,751	\$ 50,731	\$ (416)	\$ (3,077)	0.585
2018	12	131,753	\$ 2,467	\$ 9,730	\$ 12,197	\$ 66,004	\$ 2,130	\$ 9,730	\$ 11,860	\$ 62,590	\$ (337)	\$ (3,414)	0.521
2019	12	131,753	\$ 2,467	\$ 9,874	\$ 12,341	\$ 78,346	\$ 2,212	\$ 9,874	\$ 12,086	\$ 74,676	\$ (256)	\$ (3,670)	0.480
2020	12	132,114	\$ 2,467	\$ 10,115	\$ 12,582	\$ 90,928	\$ 2,297	\$ 10,115	\$ 12,411	\$ 87,088	\$ (171)	\$ (3,840)	0.443
2021	12	131,753	\$ 2,467	\$ 10,637	\$ 13,105	\$ 104,032	\$ 2,385	\$ 10,637	\$ 13,022	\$ 100,110	\$ (82)	\$ (3,923)	0.408
2022	12	131,753	\$ 2,467	\$ 10,998	\$ 13,466	\$ 117,498	\$ 2,477	\$ 10,998	\$ 13,475	\$ 113,585	\$ 9	\$ (3,913)	0.376
2023	12	131,753	\$ 2,467	\$ 11,509	\$ 13,976	\$ 131,474	\$ 2,572	\$ 11,509	\$ 14,081	\$ 127,665	\$ 105	\$ (3,809)	0.347
2024	12	132,114	\$ 2,467	\$ 11,272	\$ 13,739	\$ 145,213	\$ 2,671	\$ 11,272	\$ 13,942	\$ 141,608	\$ 204	\$ (3,605)	0.320
2025	12	131,753	\$ 2,467	\$ 11,899	\$ 14,366	\$ 159,579	\$ 2,774	\$ 11,899	\$ 14,673	\$ 156,280	\$ 307	\$ (3,299)	0.295
2026	12	131,753	\$ 2,467	\$ 12,326	\$ 14,794	\$ 174,372	\$ 2,881	\$ 12,326	\$ 15,207	\$ 171,487	\$ 414	\$ (2,885)	0.272
2027	12	131,753	\$ 2,467	\$ 13,096	\$ 15,564	\$ 189,936	\$ 2,992	\$ 13,096	\$ 16,088	\$ 187,576	\$ 525	\$ (2,360)	0.250
2028	12	132,114	\$ 2,467	\$ 13,127	\$ 15,595	\$ 205,531	\$ 3,107	\$ 13,127	\$ 16,235	\$ 203,810	\$ 640	\$ (1,720)	0.231
2029	12	131,753	\$ 2,467	\$ 13,390	\$ 15,858	\$ 221,388	\$ 3,227	\$ 13,390	\$ 16,618	\$ 220,428	\$ 760	\$ (960)	0.213
2030	12	131,753	\$ 2,467	\$ 13,692	\$ 16,159	\$ 237,547	\$ 3,352	\$ 13,692	\$ 17,044	\$ 237,472	\$ 885	\$ (75)	0.196
2031	12	131,753	\$ 2,467	\$ 14,000	\$ 16,467	\$ 254,014	\$ 3,482	\$ 14,000	\$ 17,481	\$ 254,953	\$ 1,014	\$ 939	0.181
2032	12	132,114	\$ 2,467	\$ 14,349	\$ 16,816	\$ 270,831	\$ 3,616	\$ 14,349	\$ 17,966	\$ 272,919	\$ 1,149	\$ 2,088	0.167
2033	12	131,753	\$ 2,467	\$ 14,637	\$ 17,104	\$ 287,935	\$ 3,756	\$ 14,637	\$ 18,393	\$ 291,312	\$ 1,289	\$ 3,377	0.154
2034	12	131,753	\$ 2,467	\$ 14,966	\$ 17,433	\$ 305,368	\$ 3,902	\$ 14,966	\$ 18,868	\$ 310,180	\$ 1,435	\$ 4,812	0.142
2035	12	131,753	\$ 2,467	\$ 15,303	\$ 17,770	\$ 323,138	\$ 4,053	\$ 15,303	\$ 19,356	\$ 329,536	\$ 1,586	\$ 6,398	0.131
2036	12	132,114	\$ 2,467	\$ 15,685	\$ 18,152	\$ 341,291	\$ 4,210	\$ 15,685	\$ 19,895	\$ 349,431	\$ 1,743	\$ 8,141	0.120
2037	12	131,753	\$ 2,467	\$ 15,999	\$ 18,467	\$ 359,757	\$ 4,373	\$ 15,999	\$ 20,373	\$ 369,804	\$ 1,906	\$ 10,047	0.111
2038	11	120,563	\$ 2,262	\$ 14,976	\$ 17,238	\$ 376,995	\$ 4,164	\$ 14,976	\$ 19,141	\$ 388,945	\$ 1,903	\$ 11,949	0.102
Total	300	3,295,991	\$ 61,680	\$ 315,315	\$ 376,995		\$ 73,629	\$ 315,315	\$ 388,945		\$ 11,949		
NPV 2010\$			\$ 19,938	\$ 93,840	\$ 113,777		\$ 19,967	\$ 93,840	\$ 113,806		\$ 29		

* Columns (5) and (9) above varying slightly from the petition filing due to summing unrounded data as shown in (3), (4), (7) and (8).

Performance Security Amounts Methodology and Calculation

Year	Avoided Unit Capacity Payments \$/ KW-Month*
2010	
2011	
2012	
2013	
2014	
2015	
2016	
2017	
2018	6.05
2019	6.23
2020	6.41
2021	6.60
2022	6.79
2023	6.99
2024	7.20
2025	7.41
2026	7.63
2027	7.85
2028	8.08
2029	8.32
2030	8.56
2031	8.82
2032	9.08
2033	9.34
2034	9.62
2035	9.90
2036	10.19
2037	10.50
2038	10.80
2039	11.12
2040	11.45
2041	11.79
2042	12.14
2043	
2044	
Average of amounts for avoided unit years	\$8.75 KW/month
(KW/month Multiplied by 1,000)	\$8,754.80 MW/month
(MW/month Multiplied by 12)	\$105,057.60 MW/year

*These amounts come from the 2010 PEF SOC

Using cost per MW/year, the amount is multiplied by 178 which is the number of megawatts for the avoided unit

One year **18,700,253**

The above amount is then multiplied by 2 which is the number of years to put the avoided unit into operation.

Two year **37,400,506**

The average of the unsecured credit line amounts granted by Progress Energy for a ratings range is calculated.

	Unsecured lines	Average
"A" Range	30,000,000 25,000,000	27,500,000
"BBB+ and BBB" Range	20,000,000 15,000,000	17,500,000
"BBB-"	10,000,000	10,000,000

Next, the average of the unsecured credit line amount is subtracted from the Two Year amount and is divided by 178 to get a per megawatt security cost. This security cost provides the start point and guidance for contract negotiations under the Standard Renewable Contract.

"A" Range	$37,400,506 - 27,500,000 = 9,900,506$	$9,900,506 / 178 = \underline{\underline{\$55,621 \text{ Per MW}}}$
"BBB+ and BBB"	$37,400,506 - 17,500,000 = 19,900,506$	$19,900,506 / 178 = \underline{\underline{\$111,801 \text{ Per MW}}}$
"BBB-"	$37,400,506 - 10,000,000 = 27,400,506$	$27,400,506 / 178 = \underline{\underline{\$153,935 \text{ Per MW}}}$
Below "BBB-"	$37,400,506 / 178 = \underline{\underline{\$210,115 \text{ Per MW}}}$	

Note: Actual Performance Security amounts used in the new contract standard
 "A" range - \$50,000/MW
 "BBB+/BBB" range - \$80,000/MW
 "BBB-" range - \$135,000/MW
 Below "BBB-" - \$190,000/MW