

REDACTED

DOCKET 090109-EI

EXHIBIT B

REDACTED

(2 COPIES)

COM \_\_\_\_\_  
APA \_\_\_\_\_  
ECR \_\_\_\_\_  
GCL \_\_\_\_\_  
RAD   1   \_\_\_\_\_  
SSC \_\_\_\_\_  
ADM \_\_\_\_\_  
OPC \_\_\_\_\_  
CLK \_\_\_\_\_

DOCUMENT NUMBER-DATE

03157 APR 22 9

FPSC-COMMISSION CLERK

**INTERROGATORIES & RESPONSES**

1. Please complete the following table describing the total cost of the proposed Energy 5.0 project:

Capital	O&M	Administrative Costs	Tax Credits	Rebates	Other

**Response:**

Please see the table below. By way of explanation and qualification, Energy 5.0 offers the following observations regarding the information presented here.

With the exception of the purchase price of the reclaimed mine land site, the various cost components of the Florida Solar 1 Project ("FS1") are at present estimates based on E50's experience and market intelligence. Actual values will be determined by competitive procurement processes to be conducted following satisfaction of the conditions precedent defined in E50's Negotiated Contract with Tampa Electric Company.

Capital Cost: E50 estimates FS1 capital costs including financing and transaction costs to be [REDACTED] million. The capital cost includes E50's base case estimates for development, site preparation, permitting, finance, construction and project start up as well as an estimate of the debt service reserve expected to be required by project lenders. Actual costs will depend on the PV and mounting technology selected, the timing of E50's procurement, permit requirements (not yet defined), final contractor assessment of site soil conditions (that will determine foundation requirements), and the costs of PV modules and other commodities such as copper, steel, electrical components, and labor and transportation, all of which are subject to change and market volatility.

O&M Costs: E50 estimates that the levelized annual costs for routine operation and maintenance will be approximately [REDACTED] million. O&M costs are expected to vary with the technology selected. This estimate includes administrative costs. In addition, certain of the project components are not likely to have a service life of 25 years. Project lenders will likely require a cash reserve for major maintenance and replacements. This major maintenance cash reserve is expected to require an annual contribution of [REDACTED] for the first fifteen years of the project's life.

Tax Credits/Grant: (Please see response to staff's interrogatory number 4 below.) Per the terms of the federal program 30% of "qualifying" capital costs will eligible for the grant defined below or the federal investment tax credit ("ITC"). E50 estimates that this is equivalent to approximately [REDACTED] % of the total capital costs.

DOCUMENT NUMBER-DATE  
03157 APR 22 9  
FPSC-COMMISSION CLERK

E50 has assumed that solar equipment is exempt from Florida Sales Tax and that this exclusion applies to costs for the entire array and interconnection. E50 has not assumed any benefits for additional rebates.

Capital	O&M	Administrative Costs	Grant	Rebates	Other
[redacted] million	[redacted] million; includes Administrative Costs	Included in O&M Costs	[redacted] MM	[redacted]	[redacted] per year for Major Maintenance Cash Reserve

2. Please define the weighted average cost of capital that Energy 5.0 proposes to use for purposes of this project. For purposes of this response, identify the capital structure components, amounts, relative percentages, cost rates, and the weighted average cost of capital on a pretax and after tax basis.

**Response:**

E50 expects that the FS-1 capital costs will be financed as follows:

- [REDACTED] percent with the U.S. Treasury grant in lieu of investment tax credits pursuant to Section 1603 of the American Recovery and Reinvestment Act of 2009 (hereinafter, the "Grant");
- [REDACTED] percent Debt;
- [REDACTED] percent Tax Equity; and
- [REDACTED] percent Equity.

See Energy 5.0's answer to Interrogatory No. 4 below for additional information relating to the utilization of the Grant. In particular, note that the Grant amount is 30 percent of eligible costs, and that E50 estimates that this will translate into [REDACTED] percent of the total Project capital costs as set forth above.

These percentages would be applied to the capital cost provided in the previous response and will vary depending on the final project costs and the market conditions at the time of financing.

The following table provides a breakdown of the expected capital structure and calculation of the weighted average cost of capital for the estimated capital cost and expected required interest rates and equity returns.

<u>Capital Structure</u>	<u>Portion</u>	<u>Million \$</u>	<u>Rate</u>
Grant	[REDACTED]	[REDACTED]	
Debt	[REDACTED]	[REDACTED]	[REDACTED]
Tax Equity	[REDACTED]	[REDACTED]	[REDACTED]
Equity	[REDACTED]	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]	
Tax Rate			[REDACTED]
WACC (After-Tax)			[REDACTED]
WACC (Pre-Tax)			[REDACTED]

3. Please provide the following information for the Energy 5.0 project:

a) Annual and levelized cost of the project ( $\$/kWh$ )

**Response:**

Energy 5.0's estimate of the Levelized Cost of Electricity is presented at the conclusion of this answer. The following discussion is offered to explain and qualify E50's estimate.

First, paying the project's costs, whatever they are, is an E50 obligation. E50's estimates and discussion of project costs were provided in the response to staff's interrogatory number 1 above. While, as noted in E50's responses to Interrogatories Nos. 1 and 2 above, there is substantial variability and uncertainty in the project costs and also in the cost of key capital financing components, using the WACC provided in response to Interrogatory No. 2 results in an estimated levelized annual cost of [REDACTED] million.

Translating this to a cost per kilowatt-hour requires a forecast of annual deliveries. Project generation will be dependent on several factors including: weather, equipment performance and availability.

Weather data sets upon which energy forecasts are based are made up of information collected over long periods (20 to 30 years) and compiled into typical years for each location. These data along with specific equipment and terrain information are used to forecast initial system performance.

Performance can vary substantially depending on the PV technology and mounting system employed. E50 has not yet selected a specific PV technology or mounting system.

Additionally, PV systems degrade with exposure to the elements and with age. Expected annual degradation of [REDACTED]% will directly impact generation. For purposes of economic analysis E50 has assumed delivery of [REDACTED] MWhs in the first year, declining at a rate of [REDACTED]% per year.

Using these assumptions and the WACC of the prior two responses, the project's projected annual levelized cost of generation is forecast to be [REDACTED] cents per kilowatt-hour.

b) Annual revenue (\$)

**Response:**

As indicated above, project generation will be variable resulting in variability in revenue. However, assuming a typical first year delivery of [REDACTED] MWhs and an assumed degradation of [REDACTED]% each year, the annual project revenue would start at [REDACTED] million and reflect year-to-year variability and an underlying annual decline at [REDACTED]%. The levelized annual revenue is [REDACTED] million.

c) Please provide a comparison contrasting these costs (provided in response to 3(a), above) to those found in the Navigant study for the following technologies:

**Response:**

E50 has identified three tables in the Appendix of the study that indicate that the LCOE (in cents per kilowatt-hour) for each technology under varying conditions for selected years as indicated in the following tables.

Solar PV	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Unfavorable	28.8	25.1	24.3	23.4
Mid-favorable	28.8	25.1	24.2	23.3
Favorable	27.7	24.1	23.3	22.4

Solar Thermal	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Unfavorable	25.3	25.1	25.1	25.1
Mid-favorable	25.5	25.4	25.4	25.4
Favorable	24.7	24.6	24.6	24.5

The above estimated LCOE for the FS-1 Project is less than the costs estimated in the Navigant Solar PV costs for 2009, which is when the Negotiated Contract was executed and submitted to the Commission for approval by Tampa Electric. The Navigant Study was completed in December 2008, and significant changes have occurred in the cost of financing and materials, components price/cost since then. There is no estimate provided for the year 2007 when the Tampa Electric Request for Renewable Energy Proposals was conducted and E50 established its price.

4. Please explain how the benefits, if any, of federal tax credits were included in the cost of the Energy 5.0 project?

**Response:**

As stated in response to Interrogatory No. 2 above, E50 expects to utilize the Grant to finance [REDACTED] % of the total facility cost. E50 is assuming that the FS-1 project will qualify for the Grant or that E50 will be able to monetize the investment tax credits (ITC). The form of federal tax benefits that will be available to the FS-1 Project will depend on the project schedule and construction. The FS-1 Project will only be able to take advantage of the Grant if it is "under construction" by December 31, 2010. The Treasury classifies a project to be under construction when physical work of a significant nature begins on the project, or by meeting the safe harbor provisions or "construction by contract" requirements set forth in the Section 1603 Program Guidance. (Current guidance calls for at least 5% of eligible project cost to be "incurred" through binding non-refundable contracts by December 31, 2010.)

Section 1603 of the American Recovery and Reinvestment Act of 2009 authorizes the Department of Treasury to issue grants to renewable energy facilities that were placed in service or commenced construction by the end of 2010. E50 expects the FS-1 project to qualify for a payment equivalent to 30% of the eligible costs of the property. Applications will be reviewed and payments made within 60 days from the later of the date of the complete application or the date the property is placed in service. E50 estimates that if the project meets the "under construction" qualification requirement, approximately [REDACTED] % of the total capital costs of the project will be eligible for a grant. If the FS-1 Project is not "under construction" by the current grant deadline, E50 would endeavor to fully utilize and monetize the ITC. In order to monetize the ITC, E50 would have to depend on the then available tax equity market, which is currently thin, challenging and expensive (the ITCs are only valuable to investors with significant positive tax liabilities). Using the ITC as a financing source increases uncertainty and potentially degrades the economics of the project. In addition to the ITC and/or the Grant, accelerated depreciation/Modified Accelerated Cost-Recovery System (MACRS) tax benefits are available to renewable energy projects. E50 will attempt to monetize the accelerated depreciation tax shields available to the FS-1 project through its tax equity investors.