

BID #10-MISC-16
INSTALLATION OF PHOTOVOLTAIC PANELS AT OAKDALE AND LINGANORE HIGH SCHOOL

FACT SHEET

A. **Overview:** This recommendation is to establish a contract to install photovoltaic panels at Oakdale and Linganore High Schools. A pre-bid meeting was held on June 30, 2010, and bids were opened on July 19, 2010.

1. **Bid participation:**

23 companies notified
3 companies downloaded bid package
6 companies submitted a bid
1 company submitted a "no bid"

2. **Bids were received from:**

Carbonfree Technology Corp. (Stevenson, MD)
Constellation Energy Projects & Services Group, Inc. (Baltimore, MD)
Nautilus Solar Energy, LLC (Summit, NJ)
Sun Edison Government Solutions, LLC (Beltsville, MD)
* Vanguard Energy Partners, LLC (Branchburg, NJ)
Washington Gas Energy Services (Herndon, VA)

* Indicates Minority Business

3. **Other facts:**

- The intent of this bid was to enter into a Power Purchase Agreement (PPA) with a solar company to install and maintain photovoltaic panels on the roof of Oakdale High School, with the roof at Linganore High School to be bid as an alternate.
- Funds will be provided to FCPS by the Maryland Energy Administration (MEA) through a Department of Energy (DOE) State Energy Program – Project Sunburst grant authorized by the American Recovery and Reinvestment Act (ARRA). A one-time grant payment of \$1,000 per Kilowatt (kW) of direct current (DC) (not to exceed \$500,000) will be provided by the MEA to FCPS for the solar company upon the successful implementation of a fully operational, commissioned photovoltaic (PV) panel system. There is no direct cost to FCPS for installation and maintenance of the project.
- The solar system shall generate and provide electricity for Oakdale High over the 20-year (plus) expected life of the system. The project was bid as a "turn-key project" that includes securing all permits and approvals from governmental agencies, and all installation and material costs necessary to provide a fully operational solar system. The system was designed to generate up to 500 kW-DC during peak demand.
- The PPA has a 20-year term with a start date on or before April 1, 2011 and termination date of March 31, 2031. FCPS has an option at the end of the contract term to extend the PPA, purchase the system from the vendor, or have the system removed, in its entirety, and at no cost. FCPS agrees to purchase the power generated by the solar system throughout the life of the PPA. Real-time building energy monitoring shall be utilized.
- Staff estimates that approximately 15% of Oakdale High School's electricity requirements will be generated by the solar power system.
- This grant application and project meet the goals and objectives as put forth in the Frederick County Government's recently approved sustainability study.
- The review and analysis of the proposals was administered through a four-step process:
 1. Evaluation and ranking of technical proposals
 2. Ranking of cost proposals
 3. Interview of the top three ranked companies
 4. Ranking of Power Purchase Agreements from selected interviewees
- Proposals were evaluated by a committee that included the Director of Maintenance and Operations, the Energy & Recycling Coordinator, the Buyer Specialist in charge of the bid, and the Principal of CQI Associates. The Power Purchase Agreements were reviewed by the Executive Director of Legal Services.

- Effective on or before April 1, 2011, FCPS will purchase electricity from Nautilus Solar at an initial Kilowatt hour (kWh) price of \$0.055/kWh with a yearly price escalator of 3.25% for the 20-year term of the PPA. The average unit cost per kWh over the agreement term is \$0.0758/kWh. Currently, FCPS pays \$0.0914/kWh for electricity at Oakdale High School.
 - Savings and energy costs for the first year of the PPA is estimated to be \$22,207.
 - To increase educational awareness about the use and generation of solar and alternative energies, Nautilus Solar has developed twelve (12) comprehensive solar energy curriculum units. These units will be provided for use by FCPS at no additional cost and cover all grades, K-12.
 - The bid alternate for installation of a solar system at Linganore High School is not being recommended in order to maximize usage of the \$500,000. grant funds at Oakdale High School.
 - The photovoltaic panel project is dependant upon approval of a budget amendment that adds the Project Sunburst grant to the FY'11 restricted fund.
 - Mr. Charles F. Dalphon, Energy & Recycling Coordinator, will administer this contract.
 - Minority Business Participation consisted of: 1-Hispanic, Asian, and Women.
3. **Source of Funding:** ARRA grant funds received from the Maryland Energy Administration through the Department of Energy State Energy Program – Project Sunburst not to exceed \$500,000.

B. **Recommendation:** The Facilities and Finance Committee recommends the contract for Installation of Photovoltaic Panels at Oakdale High School be awarded to the apparent low bidder, Nautilus Solar (Summit, NJ), as indicated on the attached bid tabulation.

C. **Action taken by the Board (Purchasing Department Use Only):**

BP/kap				
_____ Approved	_____ Denied	_____ Deferred	_____ Other	
09/09/10				
_____ Date	_____ Date	_____ Date	_____ Date	BM/kp

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BID TABULATION

FCPS - Oakdale High School	Carbonfree Technology Corp.	Constellation Energy Projects & Srvcs.	Nautilus Solar	SunEdison	Vanguard Energy Partners	Washington Gas Energy Srvcs.
Generated Energy Production/Quantity of Energy						
Array Size to be installed based on the nameplate rate in total peak kW/DC to be produced year one	400 kw	475 kW dc	499.33kW DC	364 kW DC	499.33 kW/DC	316 kW
<u>Annual estimated Energy Production/Quantity of Energy Generated based on installed array in total kWh/year for year one</u>	456,000 kwh	572,558 kWh/yr	610,090kWh	424,064	590,917 kWh	398,507 kWh
Price Quote excluding one-time grant payment						
Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>	\$0.185/kwh	\$0.18	\$.126/kWh	\$0.20 per kWh	\$0.1425/kWh	\$0.125/kWh
Yearly price per kWh estimation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise)	3.0% p.a.	3%	3.25%	3% per annum	2.75%/year	3.50%
Price Quote to include a one-time grant payment						
Amount of one-time grant payment request based on \$1,000 per kW-DC generated	\$400,000.00	475,000	\$499,330	\$364,000	\$499,330.00	\$316,000
<u>Adjusted Price based on receipt of one-time grant payment</u> for Year One - April 1, 2011 to May 31, 2012 fixed kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>	\$0.100/kwh	\$0.10	\$.055/kWh	0.0928 per kWh	\$0.0835/kWh	\$0.085/kWh
<u>Adjusted Price based on receipt of one-time grant payment</u> for Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement Effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)	3.0% p.a.	3%	3.25%	3% per annum	2.75%/year	2%
Power Purchase Agreement						
Term of the Purchase Power Agreement - Number of Years	20	20	20 years	20 years	20 years	20
Start Date of Purchase Power Agreement	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11
Termination Date of Purchase Power Agreement	April 1, 2031	March 31, 2031	31-Mar-31	31-Mar-31	March 31, 2031	3/31/2031
PV System Information and Costs						
Bidders Cost of Solar Generation PV System Installation and amount to be provided in the Performance Bond	\$1,800,000	\$2,567,379	\$2,200,000	\$2,118,480	\$2.1 Million	\$1.7 MM

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Start Date of PV System Installation	Project commences Sept. 1, 2010		21-Oct-11 estimated	1-Jan-11	November 1, 2010	12/13/2011
Completion Date of PV System Installation	Apr. 1, 2011	March 31, 2011	24-Nov-11 estimated	31-Mar-11	March 1, 2011	3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation	Apr. 1, 2011	April 1, 2011	no later than 31 Mar-11	1-Apr-11	April 1, 2011	3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation	Apr. 1, 2011		no later than 31 Mar-11	1-Apr-11	April 1, 2011	3/11/2011
FCPS - Linganore High School	Carbonfree Technology Corp.	Constellation Energy Projects & Srvcs.	Nautilus Solar	SunEdison	Vanguard Energy Partners	Washington Gas Energy Srvcs.
Generated Energy Production/Quantity of Energy						
Array Size to be installed based on the nameplate rate in total peak kW/DC to be produced year one	100 kW		0	136 kW DC	N/A	185 kW
Annual <u>estimated Energy Production/Quantity of Energy Generated</u> based on installed array in total kWh/year for year one	110,000 kWh		0	158,441		234,383 kWh
Price Quote excluding one-time grant payment						
Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>	\$0.185/kwh		N/A	\$0.22 per kWh		\$0.125/kWh
Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)	3.0% p.a.		N/A	3% per annum		3.50%
Price Quote to include a one-time grant payment						
Amount of one- time grant payment request based on \$1,000 per kW-DC generated	\$100,000		N/A	\$136,000		\$184,000
<u>Adjusted Price based on receipt of one-time grant payment for Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the estimated Energy Production/Quantity of Energy Generated</u>	\$0.100/kWh		N/A	\$0.11 per kWh		\$0.085/kWh

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Adjusted Price based on receipt of one-time grant payment for the Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)	3.0% p.a.		N/A	3% per annum		2.00%
Power Purchase Agreement						
Term of the Purchase Power Agreement - Number of Years	20		N/A	20 years		20
Start Date of Purchase Power Agreement	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11
Termination Date of Purchase Power Agreement	Apr. 1, 2031		N/A	31-Mar-31		3/31/2031
PV System Information and Costs						
Bidders Cost of Solar Generation PV System Installation and amount to be provided in the Performance Bond	\$450,000		N/A	\$845,920		\$1 MM
Start Date of PV System Installation	Project commences Sept. 1, 2010		N/A	1-Jan-11		12/13/2011
Completion Date of PV System Installation	April 1, 2011		N/A	31-Mar-11		3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation	April 1, 2011		N/A	1-Apr-11		3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation	April 1, 2011		N/A	1-Apr-11		3/11/2011

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BIDDER'S OPTION - ALTERNATE BID						
FCPS - Oakdale High School	Carbonfree Technology Corp.	Constellation Energy Projects & Srvcs.	Nautilus Solar	SunEdison	Vanguard Energy Partners	Washington Gas Energy Srvcs.
Generated Energy Production/Quantity of Energy						
Array Size to be installed based on the nameplate rate in total peak kW/DC to be produced year one		450 kW dc	N/A	250 kW DC	N/A	316 kW
Annual <u>estimated Energy Production/Quantity of Energy Generated</u> based on installed array in total kWh/year for year one		542,424	N/A	291,253		398,507 kWh
Price quote excluding one-time grant payment						
Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>		0.166	N/A	\$0.21 per kWh		\$0.1225/kWh
Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)		3%	N/A	3% per annum		3.50%
Price Quote to include a one-time grant payment						
Amount of one-time grant payment request based on \$1,000 per kW-DC generated		\$250,000	N/A	\$250,000		\$250,000
<u>Adjusted Price based on receipt of one-time grant payment</u> for Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>		\$0.12	N/A	\$0.096 per kWh		\$0.0925/kWh
<u>Adjusted Price based on receipt of one-time grant payment</u> for the Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)		3%	N/A	3% per annum		2.00%

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Power Purchase Agreement						
Term of the Purchase Power Agreement - Number of Years		20	N/A	20 years		20
Start Date of Purchase Power Agreement	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11
Termination Date of Purchase Power Agreement		March 31, 2031	N/A	31-Mar-31		3/31/2031
PV System Information and Costs						
Bidders Cost of Solar Generation PV System Installation and amount to be provided in the Performance Bond		\$4,610,956****	N/A	\$1,480,000		\$1.7 MM
Start Date of PV System Installation			N/A	1-Jan-11		12/13/2011
Completion Date of PV System Installation		March 31, 2011	N/A	31-Mar-11		3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation		April 1, 2011	N/A	1-Apr-11		3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation			N/A	1-Apr-11		3/11/2011
FCPS - Linganore High School	Carbonfree Technology Corp.	Constellation Energy Projects & Srvcs.	Nautilus Solar	SunEdison	Vanguard Energy Partners	Washington Gas Energy Srvcs.
Generated Energy Production/Quantity of Energy						
Array Size to be installed based on the nameplate rate in total peak kW/DC to be produced year one		420	N/A	250	N/A	468 kW
Annual <u>estimated Energy Production/Quantity of Energy Generated</u> based on installed array in total kWh/year for year one		501,887	N/A	291,253		592,926 kWh
Price quote excluding one-time grant payment						

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Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>		\$0.17	N/A	\$0.21 per kWh		\$0.115/kWh
Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)		3%	N/A	3% per annum		3.50%
Price Quote to include a one-time grant payment						
Amount of one- time grant payment request based on \$1,000 per kW-DC generated		\$250,000	N/A	\$250,000		\$250,000
<u>Adjusted Price based on receipt of one-time grant payment</u> for Year One - April 1, 2011 to May 31, 2012 fixed kWh price per kWh generated by the PV system based on the <u>estimated Energy Production/Quantity of Energy Generated</u>		\$0.12	N/A	\$0.096 per kWh		\$0.10/kWh
<u>Adjusted Price based on receipt of one-time grant payment</u> for the Yearly price per kWh escalation rate, if any, for the period of the remaining term of the Purchase Power Agreement effective April 1, 2012. (Pricing shall be interpreted as a maximum cost per kWh per year unless noted otherwise.)		3%	N/A	3% per annum		2.00%
Power Purchase Agreement						
Term of the Purchase Power Agreement - Number of Years		20	N/A	20 years		20
Start Date of Purchase Power Agreement	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11	1-Apr-11
Termination Date of Purchase Power Agreement			N/A	31-Mar-31		3/31/2031
PV System Information and Costs						
Bidders Cost of Solar Generation PV System Installation and amount to be provided in the Performance Bond		\$4,610,956****	N/A	\$1,480,000		\$2.3 MM
Start Date of PV System Installation			N/A	1-Jan-11		12/13/2011
Completion Date of PV System Installation		March 31, 2011	N/A	31-Mar-11		3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation		April 1, 2011	N/A	1-Apr-11		3/11/2011
Date of certified commercial operation of power generated by the solar photovoltaic (PV) electric generating system installation			N/A	1-Apr-11		3/11/2011
		****OHS + LHS				

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SCORE SHEET

Evaluation Criteria	Constellation Energy	Washington Gas	Vanguard	Johnson Controls	Nautalus	Sun Edison
1.) Experience and certification credentials of proposed team. (10 points)	9	9	8	7	8	10
2.) Demonstrated ability of the bidder to install and have operational the stipulated photovoltaic capacity by the RFP deadlines. Disqualification is automatic if the Bidder cannot meet the deadline. (20 points)	18	20	20	10	12	14
3.) Bidders estimated kWh production output of the proposed PV system in year one per the PPA (10 points)	9	7	10	5	10	7
4.) Price of power offered through the PPA for year one, contract duration of the PPA, and the subsequent increases in the price over the term of the PPA, if any. (40 points)	23	29	28	23	40	24
Sub Totals:	59	65	66	45	70	55
5.) Review and evaluation of the Draft and Final PPA Agreement (20 points)		20	20		20	
Total Points: 100		85	86		90	