CITY OF BEVERLY HILLS
STAFF REPORT

Meeting Date: July 8, 2010

To: Honorable Mayor & City Council

From: Alan Schneider, Director of Project Administration

Subject: Solar Energy For City Buildings Project Status Report

Attachments: Solar PV Solar RFP Proposal Preliminary Draft Summary & Matrix Comparison & Progress Report

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INTRODUCTION

This report is to provide a status of the solar energy project for City buildings. On April 5, 2010, the City issued a Request for Proposal (RFP) to invite firms to submit qualifications and proposals to develop photovoltaic energy systems at selected City facilities. This initiative reflects the City's commitment to energy conservation and a comprehensive renewable energy program for City-owned buildings.

DISCUSSION

The development of the RFP was a collaborative effort with staff and Francis Krahe & Associates, a consultant experienced in solar energy projects. The RFP specifies a photovoltaic energy system to be installed on the roof level of the following six City buildings:

1. Public Library
2. Police Facility & bridge
3. Public Works Facility & Water Treatment Plant
4. Fleet Services vehicle shop
5. Third Street parking garage
6. Civic Center parking garage

Two plan options were created to provide greater flexibility in evaluating the proposals and selection of one or more firms to implement the solar energy project.

Option A includes buildings 1 - 3; option B includes the three facilities in Option A plus buildings 4 - 6. These buildings were selected because all have recently installed new roof surfaces to accommodate the roof-top solar panels; or in the case of the parking garages, they are adjacent to the Library and 331 Foothill Office building to offset their electrical loads respectively.

The RFP established the basic design criteria for the photovoltaic energy systems at each site based on the feasibility study prepared by the consultant. The respondents were directed to submit a designed system including permitting, installation, commissioning, and operations, as well as monitoring system performance for the new photovoltaic system. In addition to the energy system design, the City requested financing options, including direct purchase, leasing and Power Purchase Agreement (PPA). Furthermore, incentives and/or rebates through the California Solar Initiative (CSI), Southern California Edison and other grant opportunities were to be considered in presenting the economics of the project.

On June 4, 2010, twelve proposals were received from the following firms (vendors):

- Clean Fuels Connection Consortium
- CSI Electrical Contractors
- Cupertino Electric
- DRI Energy
- Helix Electric
- Ivy Electric
- Omni Power
- Perma City
- Petersen Dean
- Solar City
- Sun Power & Light
- USS Cal Builders

Review and analysis of the proposals by staff and the consultant is underway. The initial review compares the proposed system sizes and kilowatt output to the estimated output in the feasibility study, as shown in the attached matrix of the twelve proposals (PV Solar RFP Proposal Comparison). Since all of the proposals included a cash purchase option, this is used as a starting point for the preliminary review. The final review will include a more detailed review of the proposals and will evaluate the specific system size, equipment, roof plans and the company's profile.

In review of the proposals there are many questions that will need to be clarified. The consultant will generate Requests for Information (RFI) to submit to the vendors in support of their proposals.

The following is a brief outline of the next steps in the process:

1. Develop list of clarification questions for all vendors
2. Receive responses to questionnaire, re-evaluate proposals based on responses
3. Update RFP proposal report and issue to City for review
4. City selection of the top three to six vendors to interview - staff level
5. Meet with City Council and present qualified company(s)
6. Negotiate contract, lease and/or PPA terms

FISCAL IMPACT

The primary goal of the RFP process is to achieve the most cost effective solar energy system. The financial analysis to determine the best approach for the City will be presented in the final report of the RFP proposals.

RECOMMENDATION

Staff recommends a short list of the three to six top vendors following the updated proposal responses to proceed with the vendor interviews as outlined above. It is anticipated that the final evaluation report with recommendations will be presented to the City Council at the August 31st meeting.

David Gustavson
Approved By

Attachment 1

City of Beverly Hills
Photovoltaic RFP Proposals
Preliminary Review

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Architectural Lighting Design
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Los Angeles, California 90013

Phone 213.617.0477
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Project #: BV000
Project #: BV001

June 17, 2010

Beverly Hills Solar PV RFP Proposal
Preliminary Draft Summary

Executive Summary

In response to the City of Beverly Hill's Solar Photovoltaic RFP[1] the Public Works & Transportation Department received twelve (12) proposals. The submitted proposals are from the following companies:

1. Clean Fuels Connection Consortium
2. CSI Electrical Contractors
3. Cupertino Electric
4. DRI Energy
5. Helix Electric
6. Ivy Electric
7. Omni Power
8. Perma City
9. Petersen Dean
10. Solar City
11. Sun Power & Light
12. USS Cal Builders

In this preliminary report we compare the proposal's "average system sizes" to the sizes calculated in the Beverly Hills Photovoltaic Feasibility Study. After verification of system sizes we compare each proposal on a cost per watt basis (see Exhibit 1). As a result, the cost per watt comparison shows us that the costs per watts are within an acceptable range (with one exception). A more in depth analysis is continuing and will be completed shortly.

The expanded evaluation will compare and rate the system components (PV modules and Inverters), plans (if any), and the company's profile. In addition, we are developing lists of questions for a shorter list of companies to clarify ambiguous or omitted information.

System Size

Table 1 compares the average "proposed system sizes" with the sizes originally estimated in the Beverly Hills Feasibility Study. The comparison table shows that the average of the "proposed system sizes" is within 15.34% of the Feasibility Study estimated sizes. When we looked at the individual buildings there appears to be a greater variance in sizes (ranging from -1.79% to 32.29%). We believe that one of the factors contributing to the different sizes is that the solar contractor may be using different shading calculations. Another factor could be the spacing between the rows of modules. As part of the clarification process, we will ask for their method of their calculation and design.

[1] The scope of the RFP was to solicit proposals for Solar Photovoltaic systems on six (6) municipal facilities. These six (6) locations are grouped into two options - Option A and Option B. Option A comprised of three (3) buildings: Main Library, Public Works/Water Treatment Building and Police Facility and Bridge. Option B comprised of Option A plus 3 additional locations: Fleet Services Vehicle Shop, 3rd Street Parking Garage, and Civic Center Parking Structure.

Table 1: System Size Comparison to Feasibility Study

The following table illustrates the comparison of the quantity of solar energy (in kW-DC) from the Feasibility Study by Francis Krahe & Associates to the average of the solar energy systems proposed.

Option A - Buildings 1 - 3

	Feasibility Study	Proposal Average	Variance
	kW-DC	kW-DC	%
Library	155.60	194.80	20.12%
Public Wks/ Water Treatment Plant	65.10	87.37	25.49%
Police	66.00	89.90	26.59%
Option A Total	**286.70**	**372.08**	**22.95%**

Option B - Buildings 4 - 6

Fleet Services Vehicle Shop	43.60	64.39	32.29%
3rd Street Parking Structure	161.00	158.17	-1.79%
Civic Parking Structure	201.00	223.13	9.92%
Option B Total	**405.60**	**445.69**	**9.00%**

TOTAL (Option A + B)	**692.30**	**817.77**	**15.34%**

Price - Option A

Option A (see Table 2 on next page) shows the "cost per watt" ($/w) ranging from $4.02 per watt to $6.68 per watt. (One proposal used $10.82 per watt - this proposal was excluded from the averages.) The Beverly Hills Feasibility Study estimated roof top systems to cost approximately $6.24 per watt.

CSI Rebates - Since the proposals used various CSI rebate rates, we used for comparison purposes $0.19/kWh, which is CSI Step 7[2] for Government use. (Please note that the photovoltaic system may eventually fall in Step 8, which is $0.15/kWh.)

Table 2: Cash Purchase - Option A

	Proposal	System Cost	System Size	Cost per watt	CSI Step 7	System Cost after CSI	Cost after CSI
		$	kW-DC	$/w	$	$	$/w
1	Petersen Dean	$1,672,100	415.76	$ 4.02/w	$584,431	$1,087,669	$ 2.616
2	DRI Energy	$1,466,741	360.40	$4.07/w	$424,263	$ 1,042,478	$ 2.890
3	Perma City	$1,390,253	305.55	$4.55/w	$420,243	$ 970,010	$ 3.175
4	Solar City	$1,929,838	403.42	$4.78/w	$559,712	$1,370,126	$ 3.396
5	CSI Electrical	$1,442,604	292.00	$4.94/w	$419,545	$1,023,059	$ 3.504
6	Sun Power & Light	$1,671,256	329.90	$5.08/w	$445,226	$1,226,030	$ 3.716
7	USS Cal Builders	$3,195,154	571.02	$5.60/w	$861,480	$2,333,674	$ 4.087
8	Omni Power	$3,194,212	521.80	$6.12/w	$691,585	$2,502,627	$ 4.796
9	Clean Fuel Consortium	$2,066,945	309.54	$6.68/w	kWh not provided	$2,066,945	$ 6.680
10	Ivy Electric	$3,950,000	365.00	$10.82/w	$479,702	$3,470,298	$ 9.508

Note: Cupertino Electric and Helix Electric are not listed in Table 2 due to their submittal lacking information for Option A.

[2] For the California Solar Initiative (CSI), as of June 16, 2010 Step 6 is currently "oversold" with 78.80 MW of applications under review for Step 6, which has only 49.08 MW remaining. It is likely that the Beverly Hills PV System may fall under the Step 7 ($0.15/kWh) rate.

Price - Option B

Option B, consists of all six locations. The prices range from $4.38 per watt to $6.26 per watt (see Table 3) - with one exception at $12.13 per watt. The Feasibility Study estimated the cost of the Garage Mounted system to cost approximately $6.19 per watt.

As noted above, in Option A, the proposals received showed various CSI rebate rates. For comparison purposes we used $0.19/kWh, which is CSI Step 7 for a Government use[3].

Table 3: Cash Purchase - Option B

	Proposal	System Cost	System Size	Cost per watt	CA Solar Incentive	System Cost after CA Incentive	Cost after CA Incentive
		$	kW-DC	$/watt	$0.19/kWh	$	$/watt
1	DRI Energy	$3,474,062	793.10	$4.38/w	$ 989,683	$2,484,424	$ 3.13/w
2	Petersen Dean	$3,730,347	813.92	$ 4.58/w	$1,147,189	$2,583,158	$ 3.17/w
3	Helix Electric	$3,050,000	615.71	$4.95/w	$ 921,221	$2,128,779	$ 3.46/w
4	Cupertino Electric	$7,293,715	1,444.30	$5.05/w	$1,936,566	$5,357,149	$ 3.71/w
5	Sun Power & Light	$3,305,734	649.00	$5.09/w	$ 883,917	$2,421,817	$ 3.73/w
6	Perma City	$5,146,749	982.35	$5.24/w	$1,140,424	$4,006,325	$ 4,08/w
7	CSI Electrical	$3,149,680	567.00	$5.55/w	$ 845,479	$2,304,201	$ 4.06/w
8	Clean Fuel Consortium	$4,775.178	791.07	$6.04/w	Unknown	$4,775.178	$ 6.04/w
9	Omni Power	$5,969,703	988.41	$6.68/w	$1,295,371	$4,674,332	$ 4.73/w
10	USS Cal Builders	$6,188,280	1,013.22	$6.11/w	$1,527,895	$4,660,385	$ 4.60/w
11	Solar City	$4,705,329	751.64	$6.26/w	$1,044,909	$3,660,420	$ 4.87/w
12	Ivy Electric	$8,500,000	701.00	$12.13/w	$ 904,462	$7,595,538	$10.84/w

[3] For the California Solar Initiative (CSI), as of June 16, 2010 Step 6 is currently "oversold" with 78.80 MW of applications under review for Step 6 which has only 49.08 MW remaining. It is likely that the Beverly Hills PV System may fall under the Step 7 ($0.15/kWh) rate.

Lease and Power Purchase Agreement Options

There were five (5) proposals that presented basic Power Purchase Agreement information as an option. The escalation rates and the payback analysis varied significantly. Similar to a real estate lease all of these variables are negotiable. Depending upon the initial review of the purchase option, we may want to explore these financing methods further.

Please see below for an overview of the proposals.

Table 4: Lease and PPA Options

	Proposal	Lease	Lease Terms	PPA	PPA Terms
		Y / N		Y / N	
1	**DRI Energy**	N		Y	Blended PPA rate $0.1592/kWh, 3% esc. 20 years
2	**Petersen Dean**	N		Y	Available through Enfinity, but did not provide info. Except that City could buy down rate.
3	**Helix Electric**	Y	Lease Terms 22 years, 5% int. with 3.5% esc.	Y	PPA rate $0.169/kWh, 3.5% esc. 22years
4	**Cupertino Electric**	Y	Bond Financing-Level Pay (9.5%) and Sculpted (10%)	Y	PPA (PPA rate $0.18/kWh with 5.5% inc. compared to $0.18/kWh utility rate with 6.0% increases) with 7 year buyout (bond $5,799,160 in year 2018) –OR- PPA with 25 years
5	**Sun Power & Light**[4]	Y	7 year lease, utilizing $1mm energy grant and initial payment of $1mm	N	
6	**Perma City**	N		Y	Provided through Tioga Energy-Option A (PPA rate $0.158/kWh, 4% esc, 20 years); Option B (PPA rate $0.20/kWh, 4% esc., 20 years). Fair Market Value Buyout Options at Years 7, 10 & 15
7	**CSI Electrical**	N		Y	Provided through Solar Power Partners (PPA rate $0.18/kWh, 3% esc. 20 years, 583kW-DC)
8	**Omni Power**	Y	Listed as an Option but did not provide any terms	Y	Listed as an Option with Real Good Solar /Tioga, SPP and SunWheel. Typ range $0.18-$0.22/kWh with 3-3.5% esc.
9	**Clean Fuel Consortium**	N		N	
10	**USS CAL**	Y	Loan at 5% over 20 years	N	
11	**Solar City**	N		Y	PPA rates (Library $0.132/kWh, Pub Wks/Wtr Treat $0.153/kWh, Police+Bridge $0.157/kWh, Fleet Serv $0.162/kWh, 3rd St Pkg $0.264/kWh, Civic Ctr Pkg $0.265/kWh) and 3.90% esc, assumed SCE $ 0.18/kWh, 6% esc, 25 years
12	**Ivy Electric**	N		N	

[4] Sun Power & Light submitted their Lease financing option as an addendum to the original proposal. In addition, they are sending us revisions based on the possibility to utilize a new type of renewable energy utility rate structure, called Rate type "R" for renewables.

The Next Steps

All of the proposals had exclusions and items that were left unclear. We are generating a list of questions to clarify their proposals. We suggest that the clarification process is limited to limit the top 3 to 6 vendors.

Below is a schedule of items that need to be completed. Please note that his a preliminary schedule for discussion purposes only.

Tasks

1 Develop list of clarification questions for vendors

2 Receive responses to questionnaire, re-evaluate proposals based on questionnaire responses

3 Update RFP proposal report and issue to City for review

4 City selection of vendors to interview - staff level

5 Meet with City Council and present qualified company(s)

6 Negotiate contract, lease and/or PPA terms

Beverly Hills
PV Solar RFP Proposal Comparison

	CSI Electrical Contractors				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$
Library	151.00	$ 743,850	$ 4.93	$ 214,255	$ 3.51
Public Wks/ Water Treatment Plant	74.00	$ 365,382	$ 4.94	$ 110,065	$ 3.45
Police	67.00	$ 333,372	$ 4.98	$ 95,224	$ 3.55
Option A Total	292.00	$ 1,442,604	$ 4.94	$ 419,545	$ 3.50
OPTION B	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	40.00	$ 201,947	$ 5.05	$ 59,715	$ 3.56
3rd Street Parking Structure	101.00	$ 645,055	$ 6.39	$ 150,089	$ 4.90
Civic Parking Structure	134.00	$ 860,074	$ 6.42	$ 190,449	$ 5.00
Option B Total	275.00	$ 1,707,076	$ 6.21	$ 400,253	$ 4.75
TOTAL	567.00	$ 3,149,680	$ 5.55	$ 845,479	$ 4.11

	SolarCity				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$
Library	222.87	$ 1,040,512	$ 4.67	$ 214,255	$ 3.51
Public Wks/ Water Treatment Plant	91.08	$ 448,358	$ 4.92	$ 110,065	$ 3.45
Police	89.47	$ 440,968	$ 4.93	$ 95,224	$ 3.55
Option A Total	403.42	$ 1,929,838	$ 4.78	$ 419,545	$ 3.50
OPTION B	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	58.88	$ 295,003	$ 5.01	$ 59,715	$ 3.56
3rd Street Parking Structure	107.64	$ 654,657	$ 6.08	$ 150,089	$ 4.90
Civic Parking Structure	181.7	$ 1,101,594	$ 6.06	$ 190,449	$ 5.00
Option B Total	348.22	$ 2,775,491	$ 7.97	$ 400,253	$ 4.75
TOTAL	751.64	$ 4,705,329	$ 6.26	$ 819,798	$ 4.11

	PermaCity				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$
Library	160.65				
Public Wks/ Water Treatment Plant	75.60				
Police	69.30				
Option A Total	305.55	$ 1,390,253	$ 4.55	$ 420,243	$ 3.17
OPTION B	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	34.65				
3rd Street Parking Structure	292.95				
Civic Parking Structure	349.20				
Option B Total	676.80	$ 3,756,496	$ 5.55	$ 720,181	$ 4.49
TOTAL	982.35	$ 5,146,749	$ 5.24	$ 1,140,424	$ 4.08

	Helix Electric				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$
Library	132.94				
Public Wks/ Water Treatment Plant	69.23				
Police	72.45				
Option A Total	274.62				
OPTION B	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	28.06				
3rd Street Parking Structure	135.47				
Civic Parking Structure	177.56				
Option B Total	341.09				
TOTAL	615.71	$ 3,050,000	$ 4.95	$ 921,221	$ 3.46

	Ivy Electrical				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$
Library	198	$ 2,100,000	$ 10.61	$ 258,599	$ 9.30
Public Wks/ Water Treatment Plant	83	$ 950,000	$ 11.45	$ 111,787	$ 10.10
Police	84	$ 900,000	$ 10.71	$ 109,317	$ 9.41
Option A Total	365	$ 3,950,000	$ 10.82	$ 479,702	$ 9.51
OPTION B	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	28	$ 350,000	$ 12.50	$ 34,022	$ 11.28
3rd Street Parking Structure	131	$ 1,800,000	$ 13.74	$ 159,174	$ 12.53
Civic Parking Structure	177	$ 2,400,000	$ 13.56	$ 231,563	$ 12.25
Option B Total	336	$ 4,550,000	$ 13.54	$ 424,760	$ 12.28
TOTAL	701	$ 8,500,000	$ 12.13	$ 904,462	$ 10.84

	Cupertino Electric				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$
Library	148.00				
Public Wks/ Water Treatment Plant	79.00				
Police	950.80				
Option A Total	1,177.80				
OPTION B	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	0.00				
3rd Street Parking Structure	0.00				
Civic Parking Structure	266.50				
Option B Total	266.50				
TOTAL	1,444.30	$ 7,293,715	$ 5.05	$ 1,936,566	$ 3.71

Beverly Hills
PV Solar RFP Proposal Comparison

	PetersenDean					USS Cal Builders					Omni Power				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$
Library	201.6	$ 795,912	$ 3.95	$ 513,209	$ 2.55	306.44					251.9				
Public Wks/ Water Treatment Plant	118.4	$ 476,453	$ 4.02	$ 307,589	$ 2.60	131.10					129				
Police	95.76	$ 399,735	$ 4.17	$ 266,871	$ 2.79	133.48					140.9				
Option A Total	415.76	$ 1,672,100	$ 4.02	$ 1,087,669	$ 2.62	571.02	$ 3,195,154	$ 5.60	$ 861,480	$ 4.09	521.8	$ 3,194,212	$6.12	$ 691,585	$ 4.80
OPTION B	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$
Fleet Srvcs. Vehicle Wkshop	65.52	$ 290,164	$ 4.43	$ 196,750	$ 3.00	88.36					0				
3rd Street Parking Structure	136.08	$ 732,836	$ 5.39	$ 538,821	$ 3.96	157.92					165				
Civic Parking Structure	196.56	$ 1,035,247	$ 5.27	$ 759,919	$ 3.87	195.92					207				
Option B Total	398.16	$ 2,058,247	$ 5.17	$ 1,495,490	$ 3.76	442.20	$ 2,993,126	$ 6.77	$ 666,415	$ 5.26	372	$ 2,775,491	$7.46	$ 603,786	$ 5.84
TOTAL	813.92	$ 3,730,347	$ 4.58	$ 2,583,158	$ 3.17	1,013.22	$ 6,188,280	$ 6.11	$ 1,527,895	$ 4.60	893.8	$ 5,969,703	$6.68	$ 1,295,371	$ 5.23

	DRI Energy					Clean Fuel Connection					Sun Power & Light				
	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen	System Size	Purchase	Cost per watt	California Incentive	Cost aft CA Incen
OPTION A	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$
Library	201.6					164.64	$ 1,094,667	$ 6.65		$ 6.65	198				
Public Wks/ Water Treatment Plant	70.6					72.45	$ 486,139	$ 6.71		$ 6.71	55				
Police	88.2					72.45	$ 486,139	$ 6.71		$ 6.71	75.9				
Option A Total	360.4	$ 1,466,741	$ 4.07	$ 424,263	$ 2.89	309.54	$ 2,066,945	$ 6.68		$ 6.68	328.9	$ 1,671,256	$ 5.08	$ 445,226	$ 3.73
OPTION B	kWh-DC	$	$/w	$	$	kWh-DC	$	$/w	$	$					
Fleet Srvcs. Vehicle Wkshop	81.9					53.55	$ 362,548	$ 6.77		$ 6.77	0				
3rd Street Parking Structure	154.4					172.20	$ 937,568	$ 5.44		$ 5.44	145.2				
Civic Parking Structure	196.4					255.78	$ 1,408,119	$ 5.51		$ 5.51	174.9				
Option B Total	432.7	$ 2,007,321	$ 4.64	$ 565,374	$ 3.33	481.53	$ 2,708,234	$ 5.62		$ 5.62	320.1	$ 1,634,478	$ 5.11	$ 438,691	$ 3.74
TOTAL	793.1	$ 3,474,062	$ 4.38	$ 989,638	$ 3.13	791.07	$ 4,775,179	$ 6.04		$ 6.04	649	$ 3,305,734	$ 5.09	$ 883,917	$ 3.73