

TO: James L. App, City Manager
FROM: Doug Monn, Public Works Director
SUBJECT: Installation of Solar Generation at Library/City Hall
DATE: April 15, 2008

NEEDS: For the City Council to consider approving a lease agreement with Applied Technologies for installation of solar generation at Library/City Hall

FACTS:

1. Starting from initial design, attention was given to achieving the most efficient lighting, ventilation and heating methods in the Library/City Hall. Additionally, the building was audited three times for potential energy savings.
2. Even with energy efficient systems, the Library/City Hall presently consumes approximately 688,000 kilowatts of electrical energy per year at a cost in excess of \$100,000.00 per year.
3. The building was assessed twice to determine if photovoltaic might lessen energy costs. Unfortunately, installation would have required a major cash investment with payback exceeding 25 years at a cost of approximately 22¢ to 25¢ per kilowatt hour. PG&E annually charges an average effective rate of \$0.15/kWh.
4. Recently, energy costs and environmental changes have resulted in solar generation becoming more cost effective.
5. In January 2008, Applied Technologies Energy Solutions, Inc. approached the City regarding the potential to retrofit city owned facilities with solar photovoltaic generation.
6. The attached proposal would provide for installation of a solar system capable of offsetting approximately 12% of the power needs of Library/City Hall at a lease rate set at 90% of the kilowatt hour cost assessed by PG&E, with a base no lower than \$0.15/kWh (current rate).
7. To demonstrate the potential and initiate the installation of solar at City facilities, Applied Technologies Energy Solutions, Inc. has assembled a package that would allow the installation of a solar generation system at Library/City Hall using a power purchase program.
8. The Library/City Hall solar array would be roof-mounted below the parapet line rendering it invisible from the surrounding streets.
9. The roofing material installed at Library/City Hall is nearing its life expectancy. It would not be prudent to install a PV system over it. Consequently it is recommended to replace the roof as part of the photovoltaic installation.

10. Applied Technologies has included preparation of the roof replacement specifications and competitive bidding. However, the City would effect the roof replacement as a separate contract with cash (approximately \$150,000). The bid and award will be consistent with Public Contract Code requirements.

**ANALYSIS &
CONCLUSIONS:**

Rates charged by PG&E are subject to adjustment (sometimes several times per year). Since 1970, the compound average growth rate of the cost of electricity was 6.7% per year. In most rate schedules PG&E also distinguishes between “peak” and “off-peak” usage, with on-peak usage being up to 3 times more expensive. A solar PV system will generate most energy during “on-peak” hours and hence contribute disproportional, positive savings in electricity cost. The Library/Library/City Hall is a PG&E A-6 rate. As such, the per kilowatt cost paid for the building varies from \$0.11/kWh to \$0.38/kWh, averaging \$0.15/kWh. The net reduction in power cost to the City for the Library/Library/City Hall would be \$12,384.00 based on an average rate of \$0.15/kWh; however, the actual annual savings should be higher depending on when peak demands drive the price per kilowatt hour to the annual adjusted high of \$0.38/kWh.

Applied Technologies’ “Power Purchase Agreement” allows the City to reduce its costs and carbon footprint with no upfront cost, having a buy-out option at the end of the term (10 years) or an extension of additional 10 years at the same conditions. Competitive bids from Renewable Energy Finance Institutions (EPURON, Tatonka Bank, Optima Group) were also evaluated as a possible finance source for the project. They require a minimum system size of \$1,000,000 (the proposed system purchase price will be near \$350,000). None of the bids came near the current cost of electricity. Applied Technologies offered a solution that provided PV power 10% lower than PG&E’s rates.

Applied Technologies offers this solution as a corporate citizen of Paso Robles in light of its newly established renewable energy division, located here in Paso Robles. Applied Technologies can take advantage of tax credits not directly available to the City providing the project is approved by April 30th and completed by December 31st 2008 (as the federal tax credits will expire the end of 2008). The only potential risk to the City should it proceed with the project would be a downward trend in electricity costs below the \$0.15/kWh. The idea of electrical costs going down is a very unlikely, hence minimal risk to the City.

Long term cost savings and compliance with Assembly Bill 32 are the most significant motivators for going forward with this project. It also provides a valuable test project for other alternate future energy deployments.

POLICY

REFERENCE: Economic Strategy; California Global Warming Solutions Act of 2006 (AB32).

FISCAL

IMPACT: Reduced electrical costs for Library/City Hall of approximately 12%.

OPTIONS:

- a) Approve Resolution 08-XX , authorizing the City Manager to inter into a lease agreement with Applied Technologies for re-roof of Library/City Hall and the installation of a Photovoltaic System, allocating \$150,000 from City Facility Repair Fund to cover the cost of the roof; or
- b) Amend, reject, or modify these options.

Prepared by: Doug Monn/Marcus Maedl

Attachments:

- 1. Historic Electricity Rate developments PG&E
- 2. Applied Technologies Offer Letter
- 3. Tatonka Bank Offer
- 4. EPURON Offer
- 5. Optima Group offer
- 6. City Facilities Off-set and Costs
- 7. Public Noticing

RESOLUTION NO. 08-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES
AUTORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT WITH
APPLIED TECNOLOGIES TO PROVIDE A PHOTOVOLTAIC SYSTEM
FOR THE LIBRARY/CITY HALL BUILDING

WHEREAS, City Hall presently consumes approximately 688,000 kilowatts of electrical energy per year at a cost in excess of \$100,000.00 per year; and

WHEREAS, Staff has been evaluating the potential of solar generation of electricity to offset the power required by City Hall since shortly after the building was constructed; and

WHEREAS, the City's are long term cost savings and compliance with Assembly Bill 32 are the most significant motivators for going forward with this project; and

WHEREAS, the only risk the City is taking is that the long term development of electricity cost might show a downward trend resulting in the cost of solar power becoming more expensive than grid electricity; and

WHEREAS, the idea of electrical costs going down is a very unlikely situation and hence a minimal risk to the City;

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of El Paso de Robles does hereby approve the installation of a PV system at the Library/City Hall building and authorizes the City Manager to enter into an agreement with Applied Technologies for the installation.

SECTION 2. That the City Council does also allocate \$150,000 from City Facility Repair Fund, Account No. 119-910-5452-445 to provide the re-roofing of the Library/City Hall in conjunction with the installation of a PV system.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 15th day of April 2008 by the following vote:

AYES:

NOES:

ABSTAIN:

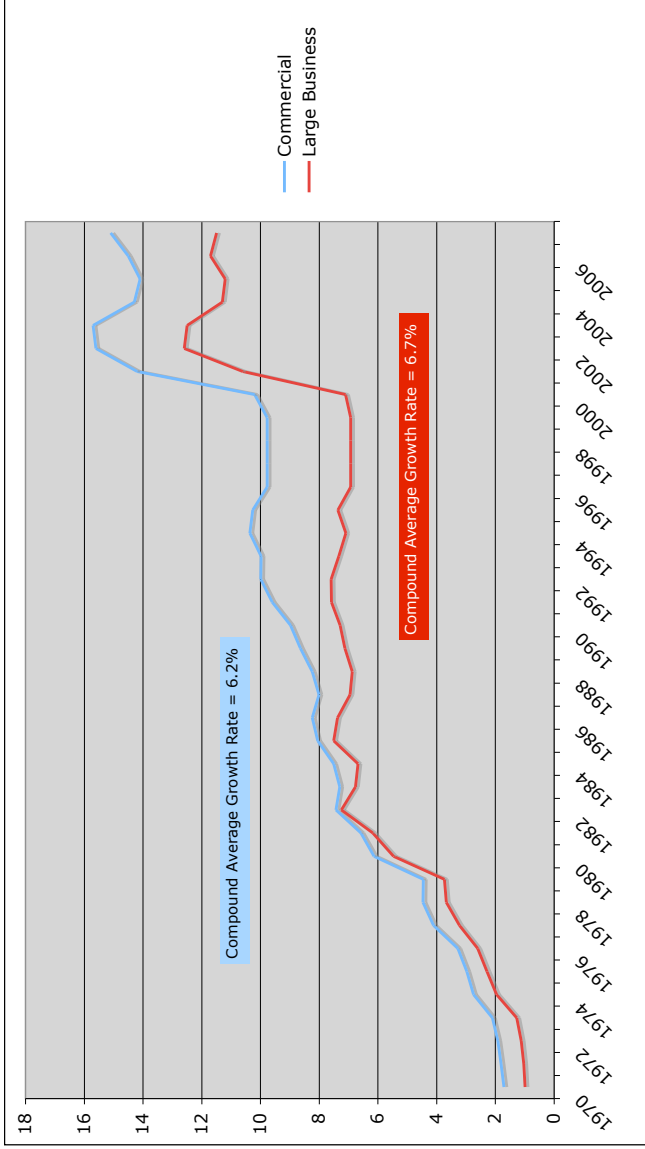
ABSENT:

Frank R. Mecham, Mayor

ATTEST:

Deborah D. Robinson, Deputy City Clerk

Year	commercial (A1, A6, A10)	large business (E20, TOU8)
1970	1.71	0.989
1971	1.81	1.034
1972	1.92	1.126
1973	2.1	1.28
1974	2.743	1.958
1975	2.979	2.286
1976	3.279	2.6
1977	4.108	3.228
1978	4.47	3.668
1979	4.459	3.74
1980	6.138	5.473
1981	6.585	6.179
1982	7.431	7.247
1983	7.305	6.766
1984	7.512	6.684
1985	8.056	7.506
1986	8.24	7.38
1987	8.008	6.954
1988	8.24	6.875
1989	8.643	7.128
1990	8.98	7.285
1991	9.595	7.581
1992	9.987	7.592
1993	9.977	7.332
1994	10.36	7.094
1995	10.26	7.367
1996	9.775	6.933
1997	9.775	6.933
1998	9.775	6.933
1999	9.775	6.933
2000	10.2	7.1
2001	14.2	10.6
2002	15.6	12.6
2003	15.7	12.5
2004	14.3	11.3
2005	14.1	11.2
2006	14.5	11.7
2007	15.1	11.5
2008	16.5	11.58
CAGR	6.15%	6.69%



Source 1970 - 1999: CPUC (California Public Utility Commission) Energy Division, Don Lafrenz Dataset from Energy Information Administration (EIA), DOE/EIA-0376(95), State Energy Price and Expenditure Report, 1995, Tables 36-38. Data for 1996 -2000 reflects AB 1890 frozen rates. Rates from 2001-2004 reflect changes implemented by the following rate-setting Commission Decisions: D.01-01-018, D.01-05-064, D.03-07-029, D.04-02-062, and D.04-07-022; rates from 2001-2004 reflect SCE and PG&E only.

Source 2000-2007: PG&E (<http://www.pge.com/notes/rates/tariffs/electric.shtml>)

Historic Electricity Rate Developments PG&E



Donald H. Van Steenwyk
Chairman & Chief Executive Officer

March 18, 2008

City of Paso Robles
1000 Spring Street
Paso Robles, CA

RE: Installation of Photovoltaic Solar Energy Systems "90%" Option

Dear Mr. App,

This letter summarizes the proposal Applied Technologies Energy Solutions, Inc. ("ATES") has structured in conjunction with its parent company, Applied Technologies Associates, Inc. ("ATA") to install and operate photovoltaic solar energy systems at multiple locations on your behalf. Under this proposal, we would enter into a Power Purchase Agreement with the City of Paso Robles ("the City"), whereby we would sell the electricity produced by the systems to the City, at agreed upon prices, that would represent a projected savings to the City compared to current and projected utility prices. ATA and ATES would provide the financing to build and operate the systems. ATES would design, install, operate and maintain the systems.

This proposal is subject to completion of final surveys and engineering designs by ATES and review and approval of the final designs by appropriate local and state agencies, and the City. It is also subject to completion of a mutually satisfactory Power Purchase Agreement, completion of design, installation and maintenance agreements between ATA and ATES, confirmation of the state rebate at \$0.22 per kilowatt hour produced for the first 5 years. The rate charged per kilowatt hour is adjustable on an annual basis and the increase will be set to 90% of PG&E's rate increase for the equivalent kWh but at least \$0.15/kWh, adjusted for inflation. ATA and/or ATES may propose alternative structures if the basic assumptions contained herein (including tax laws pertaining to the transaction and market interest rates) change prior to installation.

We have included a spreadsheet showing the systems' projected annual power output, as well as projected utility rates and our proposed alternative PPA payments. It also shows projected energy savings for the City. ATES will provide the systems' technical designs and projected performance.

The projected system size, annual power output and subsequent savings are approximations of the final numbers that may change as a result of the final designs and actual site conditions as determined by Applied Tech.



Power Purchaser: The City of Paso Robles

Power Provider: ATA. ATA shall be the owner of the system for federal and state tax purposes. As such, ATA is assuming it shall be entitled to the 30% Federal Energy Tax Credit, 5-year MACRS depreciation, and all applicable rebates and incentives.

Vendor: ATES shall design, install, operate and maintain the system on behalf of Power Purchaser and Power Provider. Vendor will also file submissions for state rebates, obtain licensing and permits, and utility interconnect agreements.

System Capacity: 140 KW (DC), 112 KW (AC) on the roof of the public library and the parking lot of the Public Services Building. Actual System Capacity will depend on final design and site conditions.

Annual System Output: First year – 210,000 KWh (projected). Vendor projects that the system performance will degrade approximately 0.1% per year thereafter. Actual Annual System Output will depend on final design and site conditions.

Projected Installation Cost: To be paid by the Power Provider

System Ownership: Power Provider shall own the system and the associated Investment Tax Credits and other tax benefits, rebates and any renewable energy credits generated by the system.

Projected Electricity Cost \$/KWh: \$.15/KWh (plus any taxes) the first year. The rate charged per kilowatt hour is adjustable on an annual basis and the increase will be set to 90% of PG&E's rate increase for the equivalent kWh but at least \$0.15/kWh, adjusted for inflation. City will allow ATES to monitor usage of and generation at the facility equipped with Solar PV system.

Payments: Power Provider shall bill Power Purchaser 12 equal monthly payments each year of the Term based on that year's Projected System Annual Output. The parties shall reconcile any deficiencies or additions to the actual annual power production in the twelfth month. Power Purchaser will make an additional



payment for any excess production, or shall receive a credit for any lesser production.

Term: Ten years followed by either a purchase provision or a five year renewal. Power Provider shall provide early termination and de-installation costs.

Projected Savings The attached spreadsheet shows projected annual and cumulative savings. Actual savings will depend on final design, site conditions, and actual utility price increases.

PPA Documentation: The Transaction is subject to the execution of a mutually acceptable Power Purchase Agreement, Site Lease, Board Resolutions, assignment acknowledgements, security filings, California rebate documentation, satisfactory design, installation, and maintenance documentation, and other documents associated therewith. The Power Purchase Agreement shall contain terms and conditions customary for similar transactions. The parties shall work in good faith to develop mutually acceptable documentation. Power Purchaser shall be responsible for insuring the system.

Governing Law: California

ATA is submitting this Proposal as confidential information. If you are in agreement with the foregoing, please sign below and, in conjunction with ATEs, we will commence state submissions, and survey and design work on your behalf. This proposal shall expire as of March 31, 2008.

Very truly yours,


Donald Van Steenwyk

Accepted and Agreed
THE CITY OF PASO ROBLES

By: _____

Name: _____

Title: _____

Date: _____



**PROPOSED PPA FOR THE CITY OF PASO ROBLES - MULTIPLE SITES
WITH SYSTEM BUYOUT OR RENEWAL**

Total Installed Watts (DC) 2,702,000
 Projected First Year Annual Output (KWh) 3,927,200
 Projected Cost \$ 17,800,000
 Assumed Grid Electricity Annual Escalation Rate 6.50%
 PPA Annual Escalation Rate 6.50%
 Assumed PPA Annual Output Degradation 0.50%

Year	ProJ System		Utility Price		PPA Price \$/KWh	Utility Pmt		PPA Pmt per Year (Proj KWh)	Annual PPA		Cumulative		PV System		Annual PPA		Cumulative PPA Savings (with Buyout)		
	Annual Output (KWh)	Annual Output (KWh)	\$/KWh	per Year (Proj KWh)		per Year (Proj KWh)	per Year (Proj KWh)		Savings (plus Renewal)	Savings (plus Renewal)	PPA Savings (plus Renewal)	Buyout	Savings (with Buyout)						
1	3,927,200		\$ 0.140	\$ 0.133	\$	\$ 549,808	\$ 522,318	\$	\$ 27,490	\$	\$ 27,490	\$	\$ 27,490	\$	\$ 27,490	\$	\$ 27,490	\$	\$ 27,490
2	3,907,564		\$ 0.149	\$ 0.142	\$	\$ 582,618	\$ 553,487	\$	\$ 29,131	\$	\$ 56,621	\$	\$ 29,131	\$	\$ 56,621	\$	\$ 29,131	\$	\$ 56,621
3	3,888,026		\$ 0.159	\$ 0.151	\$	\$ 617,386	\$ 586,516	\$	\$ 30,869	\$	\$ 87,491	\$	\$ 30,869	\$	\$ 87,491	\$	\$ 30,869	\$	\$ 87,491
4	3,868,586		\$ 0.169	\$ 0.161	\$	\$ 654,228	\$ 621,517	\$	\$ 32,711	\$	\$ 120,202	\$	\$ 32,711	\$	\$ 120,202	\$	\$ 32,711	\$	\$ 120,202
5	3,849,243		\$ 0.180	\$ 0.171	\$	\$ 693,269	\$ 658,606	\$	\$ 34,663	\$	\$ 154,865	\$	\$ 34,663	\$	\$ 154,865	\$	\$ 34,663	\$	\$ 154,865
6	3,829,997		\$ 0.192	\$ 0.182	\$	\$ 734,640	\$ 697,908	\$	\$ 36,732	\$	\$ 191,597	\$	\$ 36,732	\$	\$ 191,597	\$	\$ 36,732	\$	\$ 191,597
7	3,810,847		\$ 0.204	\$ 0.194	\$	\$ 778,480	\$ 739,556	\$	\$ 38,924	\$	\$ 230,521	\$	\$ 38,924	\$	\$ 230,521	\$	\$ 38,924	\$	\$ 230,521
8	3,791,793		\$ 0.218	\$ 0.207	\$	\$ 824,935	\$ 783,689	\$	\$ 41,247	\$	\$ 271,768	\$	\$ 41,247	\$	\$ 271,768	\$	\$ 41,247	\$	\$ 271,768
9	3,772,834		\$ 0.232	\$ 0.220	\$	\$ 874,163	\$ 830,455	\$	\$ 43,708	\$	\$ 315,476	\$	\$ 43,708	\$	\$ 315,476	\$	\$ 43,708	\$	\$ 315,476
10	3,753,970		\$ 0.247	\$ 0.234	\$	\$ 926,329	\$ 880,013	\$	\$ 46,316	\$	\$ 361,793	\$	\$ 46,316	\$	\$ 361,793	\$	\$ 46,316	\$	\$ 361,793
11	3,735,200		\$ 0.263	\$ 0.250	\$	\$ 981,608	\$ 932,527	\$	\$ 49,080	\$	\$ 410,873	\$	\$ 49,080	\$	\$ 410,873	\$	\$ 49,080	\$	\$ 410,873
12	3,716,524		\$ 0.280	\$ 0.266	\$	\$ 1,040,185	\$ 988,176	\$	\$ 52,009	\$	\$ 462,882	\$	\$ 52,009	\$	\$ 462,882	\$	\$ 52,009	\$	\$ 462,882
13	3,697,941		\$ 0.298	\$ 0.283	\$	\$ 1,102,258	\$ 1,047,145	\$	\$ 55,113	\$	\$ 517,995	\$	\$ 55,113	\$	\$ 517,995	\$	\$ 55,113	\$	\$ 517,995
14	3,679,451		\$ 0.317	\$ 0.302	\$	\$ 1,168,035	\$ 1,109,634	\$	\$ 58,402	\$	\$ 576,397	\$	\$ 58,402	\$	\$ 576,397	\$	\$ 58,402	\$	\$ 576,397
15	3,661,054		\$ 0.338	\$ 0.321	\$	\$ 1,237,738	\$ 1,175,851	\$	\$ 61,887	\$	\$ 638,284	\$	\$ 61,887	\$	\$ 638,284	\$	\$ 61,887	\$	\$ 638,284
16	3,642,749		\$ 0.360	\$ 0.342	\$	\$ 1,311,600	\$ 1,246,020	\$	\$ 65,580	\$	\$ 703,864	\$	\$ 65,580	\$	\$ 703,864	\$	\$ 65,580	\$	\$ 703,864
17	3,624,535		\$ 0.383	\$ 0.364	\$	\$ 1,389,870	\$ 1,320,376	\$	\$ 69,493	\$	\$ 773,357	\$	\$ 69,493	\$	\$ 773,357	\$	\$ 69,493	\$	\$ 773,357
18	3,606,412		\$ 0.408	\$ 0.388	\$	\$ 1,472,810	\$ 1,399,170	\$	\$ 73,641	\$	\$ 846,998	\$	\$ 73,641	\$	\$ 846,998	\$	\$ 73,641	\$	\$ 846,998
19	3,588,380		\$ 0.435	\$ 0.413	\$	\$ 1,560,700	\$ 1,482,665	\$	\$ 78,035	\$	\$ 925,033	\$	\$ 78,035	\$	\$ 925,033	\$	\$ 78,035	\$	\$ 925,033
20	3,570,438		\$ 0.463	\$ 0.440	\$	\$ 1,653,835	\$ 1,571,143	\$	\$ 82,692	\$	\$ 1,007,725	\$	\$ 82,692	\$	\$ 1,007,725	\$	\$ 82,692	\$	\$ 1,007,725
Renewal														FMV (or 30% of Cost)					
21	3,552,586		\$ 0.493	\$ 0.469	\$	\$ 1,752,527	\$ 1,664,901	\$	\$ 87,626	\$	\$ 1,095,351	\$	\$ 87,626	\$	\$ 1,095,351	\$	\$ 87,626	\$	\$ 1,095,351
22	3,534,823		\$ 0.525	\$ 0.499	\$	\$ 1,857,110	\$ 1,764,254	\$	\$ 92,855	\$	\$ 1,188,207	\$	\$ 92,855	\$	\$ 1,188,207	\$	\$ 92,855	\$	\$ 1,188,207
23	3,517,149		\$ 0.560	\$ 0.532	\$	\$ 1,967,933	\$ 1,869,536	\$	\$ 98,397	\$	\$ 1,286,603	\$	\$ 98,397	\$	\$ 1,286,603	\$	\$ 98,397	\$	\$ 1,286,603
24	3,499,563		\$ 0.596	\$ 0.566	\$	\$ 2,085,369	\$ 1,981,100	\$	\$ 104,268	\$	\$ 1,390,872	\$	\$ 104,268	\$	\$ 1,390,872	\$	\$ 104,268	\$	\$ 1,390,872
25	3,482,066		\$ 0.635	\$ 0.603	\$	\$ 2,209,813	\$ 2,099,323	\$	\$ 110,491	\$	\$ 1,501,362	\$	\$ 110,491	\$	\$ 1,501,362	\$	\$ 110,491	\$	\$ 1,501,362

Annual KWh output, utility price increases, and PPA Savings are projections and are subject to final design, site conditions and other factors. These projections are provided to assist your decisions and evaluations, and are not a guarantee of actual savings, future utility electricity rates, electrical production or governmental policies.

Epuron Tax-Exempt Capital Lease Cash Flows

- Implied Lease price of 18 cents/kWh; Fully amortizing lease payments grow at 3.50%
- Public Entity owns equipment immediately and receives higher 32 cent PBI
- Performance guarantee & Equipment warranty is provided for first 10 years

Year	Solar kWh	Avoided Utility Cost	Solar Payment	SREC+Incentives	EPURON Lease Payment	O&M	Inverter*	Total Net Payments	Annual Savings
1	1,419,880	198,783	255,529	468,560	724,089	10,922	-	266,450	(67,667)
2	1,412,781	210,710	262,518	466,218	728,735	11,249	-	273,767	(63,057)
3	1,405,717	223,353	271,706	463,887	735,592	11,587	-	283,292	(59,940)
4	1,398,688	236,754	281,215	461,567	742,782	11,934	-	293,150	(56,396)
5	1,391,695	250,959	291,058	459,259	750,317	12,292	-	303,350	(52,391)
6	1,384,736	266,017	301,245	456,964	758,002	12,661	-	313,906	(47,889)
7	1,377,813	281,978	311,788	454,683	765,737	13,041	-	324,829	(42,852)
8	1,370,923	298,896	322,701	452,426	773,522	13,432	-	336,133	(37,237)
9	1,364,069	316,830	333,996	450,183	781,357	13,835	-	347,831	(31,001)
10	1,357,248	335,840	345,685	447,954	789,242	14,250	-	359,936	(24,096)
11	1,350,462	355,990	357,784	445,739	797,177	14,678	24,150	396,612	(40,622)
12	1,343,710	377,350	370,307	443,538	805,162	15,118	24,150	409,575	(32,225)
13	1,336,991	399,991	383,268	441,342	813,197	15,572	24,150	422,989	(22,998)
14	1,330,306	423,990	396,682	439,151	821,272	16,039	24,150	436,871	(12,880)
15	1,323,655	449,430	410,566	436,965	829,387	16,520	24,150	451,236	(1,806)
16	1,317,037	476,396	424,936	434,784	837,542	17,016	24,150	466,101	10,294
17	1,310,451	504,979	439,808	432,608	845,737	17,526	24,150	481,484	23,495
18	1,303,899	535,278	455,202	430,437	853,972	18,052	24,150	497,403	37,875
19	1,297,380	567,395	471,134	428,271	862,247	18,593	24,150	513,877	53,518
20	1,290,893	601,438	487,623	426,110	870,562	19,151	24,150	530,925	70,514
21	1,284,438	637,525	504,690	423,954	878,917	19,726	24,150	548,566	88,959
22	1,278,016	675,776	522,354	421,803	887,312	20,317	24,150	566,822	108,954
23	1,271,626	716,323	540,637	419,657	895,747	20,927	24,150	585,714	130,609
24	1,265,268	759,302	559,559	417,516	904,222	21,555	24,150	605,264	154,038
25	1,258,942	804,860	579,144	415,380	912,737	22,201	24,150	625,495	179,365

* Inverter schedule accounts for hypothetical maintenance or potential replacement costs.

02-14-2008 -- City of Paso Robles Good Faith Estimate -- Applied Technologies Proposal

Lease Option:	20-Year Term	Nominal Annual Rate:	4.720 %	PV System Purchase Price:	\$6,897,247
Presented by:	OGI/MAM			MAM Quoted:	2/13/2008
Compound Period:	Annual	Stepped-Up Payments Years 1-5; Fixed Payments Years 6-20		Page:	1

Year	Current Usage	System Output in kWh	Lease Payments	CA Rebates	remaining electricity drawn from grid in kWh	remaining electricity cost (estimate)	The Alternative (do nothing)	Sum per year Lease	Cumulative Payments Lease
1	2,684,120	1,419,880	\$670,000.00	\$454,362	1,264,240	\$176,994	\$398,323	\$392,632	\$392,632
2	2,684,120	1,418,460	\$685,000.00	\$453,907	1,265,660	\$187,824	\$422,223	\$418,917	\$811,549
3	2,684,120	1,417,042	\$700,000.00	\$453,453	1,267,078	\$199,316	\$447,556	\$445,863	\$1,257,412
4	2,684,120	1,415,625	\$715,000.00	\$453,000	1,268,495	\$211,512	\$474,410	\$473,512	\$1,730,924
5	2,684,120	1,414,209	\$730,000.00	\$452,547	1,269,911	\$224,453	\$502,874	\$501,906	\$2,232,830
6	2,684,120	1,412,795	\$458,204.36		1,271,325	\$238,185	\$533,047	\$696,389	\$2,929,219
7	2,684,120	1,411,382	\$458,204.36		1,272,738	\$252,756	\$565,029	\$710,960	\$3,640,180
8	2,684,120	1,409,971	\$458,204.36		1,274,149	\$268,219	\$598,931	\$726,423	\$4,366,603
9	2,684,120	1,408,561	\$458,204.36		1,275,559	\$284,627	\$634,867	\$742,831	\$5,109,435
10	2,684,120	1,407,152	\$458,204.36		1,276,968	\$302,037	\$672,959	\$760,241	\$5,869,676
11	2,684,120	1,405,745	\$458,204.36		1,278,375	\$320,513	\$713,337	\$778,717	\$6,648,393
12	2,684,120	1,404,339	\$458,204.36		1,279,781	\$340,117	\$756,137	\$798,321	\$7,446,715
13	2,684,120	1,402,935	\$458,204.36		1,281,185	\$360,919	\$801,505	\$819,123	\$8,265,838
14	2,684,120	1,401,532	\$458,204.36		1,282,588	\$382,994	\$849,595	\$841,198	\$9,107,036
15	2,684,120	1,400,130	\$458,204.36		1,283,990	\$406,417	\$900,571	\$864,621	\$9,971,658
16	2,684,120	1,398,730	\$458,204.36		1,285,390	\$431,272	\$954,605	\$889,476	\$10,861,134
17	2,684,120	1,397,332	\$458,204.36		1,286,788	\$457,645	\$1,011,882	\$915,849	\$11,776,983
18	2,684,120	1,395,934	\$458,204.36		1,288,186	\$485,631	\$1,072,594	\$943,835	\$12,720,819
19	2,684,120	1,394,538	\$458,204.36		1,289,582	\$515,327	\$1,136,950	\$973,531	\$13,694,350
20	2,684,120	1,393,144	\$458,204.36		1,290,976	\$546,837	\$1,205,167	\$1,005,041	\$14,699,391
21	2,684,120	1,391,751			1,292,369	\$580,273	\$1,277,477	\$580,273	\$15,279,664
22	2,684,120	1,390,359			1,293,761	\$615,751	\$1,354,126	\$615,751	\$15,895,415
23	2,684,120	1,388,968			1,295,152	\$653,398	\$1,435,373	\$653,398	\$16,548,813
24	2,684,120	1,387,579			1,296,541	\$693,344	\$1,521,496	\$693,344	\$17,242,157
25	2,684,120	1,386,192			1,297,928	\$735,732	\$1,612,785	\$735,732	\$17,977,889
67,103,000		35,074,284	\$10,373,065.40	\$2,267,269	32,028,716	\$9,872,093	\$21,853,819	\$17,977,889	

City Facilities Off-Set and Costs

	Location	System Size in kW	annual Generation in kWh	annual need	percentage offset	current rate \$/kWh	PPA starting rate	system sales price in W/STC	System Price
1	Airport Shaded Parking	69	102,000	102,000	100%	\$0.14	\$0.18	\$7.40	\$510,600.00
2	Barney Schwartz Park	350	511,000	550,000	93%	\$0.13	\$0.18	\$7.40	\$2,590,000.00
3	Centennial Park	323	472,000	475,000	99%	\$0.14	\$0.18	\$7.00	\$2,261,000.00
4	City Hall	53	83,000	700,000	12%	\$0.14	\$0.18	\$6.40	\$339,200.00
5	Golden Hills Water Towers								\$0.00
6	Pioneer Museum	11	17,080	17,120	100%	\$0.17	\$0.18	\$6.30	\$69,300.00
7	Public Services Bldg	87	127,000	716,000	18%	\$0.13	\$0.18	\$7.40	\$643,800.00
8	Train Station	48	69,800	85,000	82%	\$0.12	\$0.18	\$7.50	\$360,000.00
9	Veterans Bldg	25	38,000	39,000	97%	\$0.17	\$0.18	\$7.50	\$187,500.00
	Total or Average	966	1,419,880	2,684,120	53%	\$0.14		\$7.11	\$6,961,400.00

annual escalation 6% (?) 2% (guaranteed)

approximately 1pound of CO2 is generated per kWh of electricity

The systems combined would reduce the city's carbon footprint by 1,377,284 Million pounds per year

