Supporting Documentation for Project #1

Multifamily Housing EBALDC Upgrades

From: Jasleen Kaur
To: Nick Dirr
Subject: Plumbing video scoping of 8 units - 101, 102, 103, 104, 105, 106, 201, 225
Date: Tuesday, November 18, 2014 4:07:12 PM

Nick,

Below is a message sent by our GC, who conducted a video scoping of 8 units early in their preparation of the scope. She refers to the items saved in the Box, so I will attempt to send those over to you. I also have the flash drive as she refers to, here, which we will save until later.

The costs as earmarked by the GC are:

- PLUMBING: Video scoping $3,387
- Clean out sewer piping $ 3,226
- Plumbing repairs and Maintenance $13,226
- Replace 100 gallon existing boilers with high efficiency type. $96,781
- Replace hot water recirculation pumps with demand control type $ 10,323
- Reprogram Planters and Landscaping : recondition planters-remove soil, waterproof, import soil and install irrigation for landscaping $280,887
- Provide new drip irrigation and drought resistant plants at all landscaped areas - $ 57,581
- Interior plumbing. Add aerators to faucets-Kitchen--$ 25,968
- Add aerator to faucets-Bathroom--$ 32,081
- New low flow aerators at showers--$18,548

- New 1.28 gpf toilets
- Tubs & surrounds cleaning & recaulking --$ 51,935. Total interior plumbing --$247,806.

Hello Team,
You should have received a notification from Box today, which would allow you to review the (rather large) files I have uploaded with the outcome of our plumbing research. I put a few sample videos (smallest of 15 total clips) on Box for you to view to get an idea of what the piping is like internally. I also included the photos that were taken, the written synopsis, the As-Built drawings showing the units and areas surveyed (with my hand written notes on them) and a Preventative Maintenance pricing sheet from Therma (the plumber who did the review/videos). It was over 398 MB to upload all the videos so I'd like to give you the memory stick Therma provided me which contains all of the videos rather than upload them all to Box.

Essentially we did not find any issues with the main lines and only about 1/2 the units we investigated had concentrated build up. In the photo's you'll note two that are specifically titled. Those are photos of obstructions we found in the pipes. We are unable to identify exactly what the items are, but wanted you to note their existence. Although we did not snake or video the individual lines in 101 - 106 we reviewed the main lines that each of them dumps into and they were clear with little or no build up. As a result, the general feeling is that more preventative maintenance is needed. As the building ages we suggest you perform preventative maintenance more frequently to keep the clogging and back ups at bay. I would be happy to discuss this in more detail at our next meeting. Do not hesitate to give me a

call with any questions or comments.

I am still awaiting the elevator consultants write up and will forward that to you as soon as it is received.
Best Regards,

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Total Control Panel Login

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SHEET MULCHING - PRICING ANALYSIS

		SHEET MULCHING		IRRIGATION TO DRIP		PLANTING		METAL EDGING	
Pricing for Sheet Mulching, Irrigation & Planting are per square foot. Metal Edging is per lineal foot.		Cut turf perimeter, 1-2 layers cardboard overlapped, 2"-3" organic compost and 2"-3" recycled mulch		Cap heads, tie into existing laterals with inline drip, add PR & Filter to exist valve -TO- New inline drip system.		Plant material range - 1 gal at 48" OC to 5 gal at 36" OC		Range - 4" x 3/16" to 12" x 1/4"	
		LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
PRIVATE - Large (22,000 SF or more)	**Total**	**$0.75**	**$1.25**	**$0.96**	**$1.25**	**$1.05**	**$5.50**	**$9.25**	**$16.50**
	Labor	$0.34	$0.56	$0.40	$0.53	$0.44	$2.31	$4.81	$5.12
	Materials	$0.41	$0.69	$0.56	$0.73	$0.61	$3.19	$4.44	$11.39
PRIVATE - Small (+/-800 sf)	**Total**	**$1.25**	**$1.75**	**$1.25**	**$2.50**	**$1.50**	**$7.50**	**$14.00**	**$21.50**
	Labor	$0.84	$1.06	$0.69	$1.78	$1.12	$6.93	$9.56	$10.11
	Materials	$0.41	$0.69	$0.56	$0.73	$0.38	$0.57	$4.44	$11.39
PUBLIC (P-Wage varies by County) - Large (22,000 SF or more)	**Total**	**$0.87**	**$1.46**	**$1.11**	**$1.44**	**$1.21**	**$6.35**	**$11.03**	**$18.40**
	Labor	$0.46	$0.77	$0.55	$0.72	$0.60	$3.16	$6.59	$7.01
	Materials	$0.41	$0.69	$0.56	$0.73	$0.61	$3.19	$4.44	$11.39
PUBLIC (P-Wage varies by County) - Small (+/- 800 SF)	**Total**	**$1.56**	**$2.14**	**$1.51**	**$3.16**	**$1.92**	**$10.06**	**$17.54**	**$25.24**
	Labor	$1.15	$1.46	$0.95	$2.43	$1.54	$9.50	$13.10	$13.85
	Materials	$0.41	$0.69	$0.56	$0.73	$0.38	$0.57	$4.44	$11.39

cagwin & norward
landscape contractors

By: Aaron Majors & Gary Nicolson

Updated: 4/29/14

Hismen Hin-Nu Apartments, Family Housing, 92 apts, 2555 International Blvd Oakland 94601

Baseline Whole Building Water Consumption 6,980,635 gal/yr

*note 102 bathrooms

Based on actual EBMUD bills provided by EBALDC.

EBALDC	Measure	Site Gallons/ Yr Water Savings	Site Therms/ Yr Savings	Site kWh/ Yr Savings	Estimated Material Cost	Estimated Labor Cost	Estimated Cost (before incentives)	Estimated Incentive	
	Apartment Low Flow Showerheads and Faucet Aerators	55,998	4,692	0	$1,224	$1,836	$3,060	$204	$25/showerhead installed, $10/kitchen installed, $5/bathroom installed. (based on bulk purchase estimates and previous experience). Fixture Count based on feedback from buildign staff which is existing bathroom aerators are 2.2 gpm and all showerheads are 2.5 gpm. Existing kitchen areators are 1.8 gpm. Assumes new bathroom aerators are less than or equal to 1.5 gpm and showerheads are 1.5 gpm. Assumes EBMUD will provide free aerators, and assume aerators material is 40% of the installed cost. Cannot use EBMUD showerhead incentive, as they only provide 2.0 GPM.
	Apartment ≤ 1.28 GPF Toilets	26,112	0	0	$12,240	$18,360	$30,600	$0	Use PAYS spreadsheet, 1.6 to 1.06 GPF = 256 gal/apt ($300 avg cost for Stealth 0.84 gpf, PAYS negotiated down to $250). EBMUD does not provide incentives for incentives for 1.6 GPF existing. EBALDC states all current toilets are 1.6 GPF.
	Building Plumbing Leak Repair	29,937	88	0	$2,944	$4,416	$7,360	$0	Estimated cost at $50 per apartment for survey, and $300 per apt to repair (10% of apartments have leaks at 1 drip per second). Assuming 3254 gallon per year for leak, and 25% of that leak is hot water = 6.4/year. Assume 10% of apts have leaks. Assumes 1 drip per second leaks. Calcs from AWWA
	Lawn Conversion to drought tolerant Landscaping with efficient irrigation system	82,560	0	0	$23,032	$34,549	$57,581	$2,064	43 planters, assume 64 sq ft each. Current irrigation has no controls and is standard spray irrigation. Baseline consumption of 50 gal/SF per Kelly. Drip irrigation saves 60% per their spreadsheet. Cost was $57,581 from GC (irrigation and drought tolerent). EBMUD provides incentives of up to $20,000.
	High Efficiency Condensing Central Water Heater Upgrade	0	4,716	0	$40,000	$60,000	$100,000	$62,100	Existing is standard efficiency 80% Small Commercial tank type boilers, and proposed replaced is condensing water heaters with 90% thermal efficiency or greater. Used Deemed savings values from the California Public Utilities Commission. Cost is based on General Contractor Pricing. Incentive assumes that the project will be eligible for BAMBE.
	Demand Controls on Central Water Heating Recirculation System	0	2,208	2,576	$4,800	$7,200	$12,000	$6,900	Current recirculation pumps operate continulatly, and replacement is a demand controlled recircualtion pump. Energy savings are based ont eh California Public Utilities Commision deemed savings. Assumes $3000/control. Incentive assumes that the project will be eligible for BAMBE.
	TOTAL	**194,607**	**11,704**	**2,576**	**$84,240**	**$126,361**	**$210,601**	**$71,268**	
								$139,333 Grant Amt	

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Program Quick Facts

Cash Rebates for Property Improvements

Install multiple improvements and earn $750 per unit in rebates

An energy consultant will work with you to customize a package of improvements that matches your property's needs and meets a minimum of 10% whole building energy savings (estimated by using building simulation software). Select your own licensed contractors and manage your installation.

The rebate is available after the work is complete and the program staff visits your site to confirm the installation. Rebates are designed to help bring down the cost of an upgrade project, and may cover 20 – 40% of the upgrade. Calculate your rebate by multiplying the number of units times $750.

For example, a 40 unit project would receive $30,000:

Units	Per Unit Rebate		Total Rebate
40	x $750	=	$30,000

Free Energy Consulting

Get started today: Enroll online at Multifamily.EnergyUpgradeCA.org, call (510) 891-6558 or email multifamily@stopwaste.org to express your interest in the program. An energy consultant will discuss your priorities and your property or portfolio's condition, and will customize an assistance plan for the project that will help you:

- Evaluate potential cost-effective green and energy improvements
- Analyze your utility bills
- Find all available incentive programs from utilities, government, financing and other resources
- Identify green label options for your building
- Verify installed enhancements with an on-site visit
- Utilize additional assistance as requested

Projects that pursue these program rebates also receive free on-site verification of installed measures.

Property Eligibility

- 5 or more attached dwelling units
- Located in 9-county Bay Area
- Affordable housing, market rate rentals, condominiums, other ownership configurations eligible
- Program services and funds available to eligible participants on a first-come, first-served basis[1]

5 Simple Steps to Participate

1. Enroll Online
2. Get your Free Energy Consulting
3. Reserve Rebates
4. Install Property Enhancements
5. Claim Rebates

[1] The program runs from July 2013 through December 2014. To be sure to receive the rebate, you must complete construction and submit a Rebate Claim Form by December 15, 2014.

Supporting Documentation for Project #2

Eden Housing Multifamily Upgrades

Eden Lodge, Senior Housing, 143 apts, 400 Springlake Dr. San Leandro 94578

EDEN **Baseline Whole Building Water Consumption** 3,155,041 gal/yr

Measure	Site Gallons/ Yr Water Savings	Site Therms/ Yr Savings	Site kWh/ Yr Savings	Estimated Material Cost	Estimated Labor Cost	Estimated Total Cost (before incentives)	Estimated Incentive
Apartment Low Flow Showerheads and Faucet Aerators	67,203	4,011	0	$1,562	$2,343	$3,905	$1,064
Apartment ≤ 1.28 GPF Toilets	36,608	0	0	$17,160	$25,740	$42,900	$0
Building Plumbing Leak Repair	46,532	137	0	$4,576	$6,864	$11,440	$0
Lawn Conversion to drought tolerant landscaping with efficient irrigation system	952,500	0	0	$64,598	$96,896	$161,494	$13,550
Demand Controls on Central Water Heating Recirculation System	0	3,432	4,004	$3,600	$5,400	$9,000	
TOTAL	**1,102,843**	**7,580**	**4,004**	**$91,496**	**$137,243**	**$228,739**	**$14,614**

$214,125 Grant Amt

Methodology

Based on accounting records of EBMUD invoices. As only billed dollar amount was available, so assume $0.010 per gal to quantify the gallons of consumption. (which was the rate for Hismen).

Use PAYS spreadsheet, 2.5 to 1.5 showerhead = 475 gal/apt, 43 therms/apt. Bath Aerator = 74 gal/apt, 3 therms/apt, Kitchen Aerator = 165 gal/apt, 5 therms/apt. Assumed costs are $25/showerhead installed, $10/kitchen installed, $5/bathroom installed. based on bulk purchase estimates and previous experience). Uses actual fixture survey from Eden of existing flow rates, which is existing aerators are 2.2 gpm and 65 showerheads are 2.5 gpm. Assumes new aerators are less than or equal to 1.5 gpm and showerheads are 1.5 gpm. Assumes EBMUD will provide free aerators, and assume aerators is 40% of the cost. Cannot use EBMUD showerhead incentive, as they only provide 2.0 GPM
Use PAYS spreadsheet, 1.6 to 1.06 GPF = 256 gal/apt ($300 avg cost for Stealth 0.84 gpf, PAYS negotiated down to $250). EBMUD does not provide incentives for incentives for 1.6 GPF existing. Uses actual fixture survey from Eden of existing flow rates
Estimated cost at $50 per apartment for survey, and $300 per apt to repair (10% of apartments have leaks at 1 drip per second). Assuming 3254 gallon per year for leak, and 25% of that leak is hot water = 6.4/year. Assume 10% of apts have leaks. Assumes 1 drip per second leaks. Calcs from AWWA
50k sq ft of landscaping being irrigated per Eden, 2100 sq ft of sod. Following calcs from Kelly: Baseline consumption of 50 gal/SF (derated to 30 gal to be conservative). Current irrigation has no controls and is standard spray irrigation. Drip irrigation saves 60% per their spreadsheet. Cost is 3.14/sf. Sod conversion saves 25 gal/q ft sft. Cost is 2.14/sf. EBMUD provides incentives of up to $20,000.
Current recirculation pumps operate continulatly, and replacement is a demand controlled recircualtion pump. Energy savings are based ont eh California Public Utilities Commision deemed savings. Assumes $3000/control

Supporting Documentation for Project #3

Industrial Laundry Upgrades in Oakland and San Leandro

Ozone Savings Analysis

(2) TOS-102e

Bay Linen
2993 Teagarden Street
San Leandro, CA 94577

The savings projections are calculated from the data shown below. This data is based on information received from the customer, chemical representative and industry averages. Due to variations in operations and accuracy of data received, these numbers are intended as a guide to reflect potential savings.

	Assumptions:	Ozone	Traditional
	---	-	-
1	Gallons/pound - light soil	1.350	1.750
2	Gallons/pound - medium/heavy soil	1.750	2.250
3	Percentage hot water - light soil	0%	80%
4	Percentage hot water - medium/heavy soil *	20%	90%
5	Pounds/ per day	5,000	5,000
6	Percentage of linen - light soil	90%	90%
7	Percentage of linen - medium/heavy soil	10%	10%
8	Average ambient water temperature	65	65
9	Average hot water temperature at boiler/heater	140	140
10	Cost per therm of heating source	$1.00	$1.00
11	Cost of Water/sewer per/1,000 gallons **	$8.50	$8.50
12	Hours of dryer usage per day	18	29
13	Labor rate per pound	$0.08	$0.08
14	% Labor savings	10%	0%
15	Annual Linen Replacement ***	$0.00	$0.00
16	% Linen replacement savings	20%	0%
17	Days per year of operation	365	365
18	Total washing machine capacity	455	455

* Items 1-4 were compiled through testing done by nationally recognized washer mfg. Using a nationally known chemical co.'s traditional cycles vs. Total Ozone Solutions ozone cycles in conjunction with lab test swatches proving as good if not better results.
** Items 5-11 are actual costs / % / temperatures at your property/facility per your records or if records were not available local avg's.
*** Item 15 is actual cost per your records or industry averages per a nationally recognized consulting firm.

Savings Summary

Gas and Water Savings:

Hot Water Gallons Saved Annually	**97.61%**	**2,605,188**
Total Gallons Saved Annually	**22.78%**	**748,250**
Therm Savings from Washer Hot Water Reduction		**20,271.62**
Therm Savings from Dryer Usage Reduction		**8,516.62**

Annual Dollar Savings:

Annual Water Savings from Total Water Reduction	**$6,360.13**
Annual Gas Savings from Hot Water Reduction	**$20,271.62**
Annual Dryer Savings from Reduced Drying Time	**$8,516.62**
Annual Laundry Labor Savings	**$14,600.00**
Annual Linen Replacement Savings	**$0.00**

Annual and Monthly Utility and Total Savings:

Annual Utility Savings		**$35,148.36**
Monthly Utility Savings	**$2,929.03**	
Annual Total Savings from Total Ozone Solutions		**$49,748.36**
Monthly Total Savings from Total Ozone Solutions	**$4,145.70**	

System and Rebates:

Complete ozone system	(Equipment $17,500 Installation $5,000)	**$22,500.00**
Estimated Rebates Available to Property	PG&E NRR: 11,250.00	**$11,250.00**
Cost of System after Estimated Rebate		**$11,250.00**

ROI:

Monthly ROI based on Utility Savings	**3.84**
Monthly ROI including additional Linen and Labor Savings	**2.71**

Ozone Savings Analysis
Bay Linen
San Leandro, CA 94577
(2) TOS-102e

Gas Savings Analysis - Washers

	Total Ozone Solutions	Traditional
Temperature rise in degrees	75	75
Annual gallons hot	**63,875**	**2,669,063**
Therms used	497.03	20,768.64
Cost/therm	$1.00	$1.00

Gas Savings Analysis - Dryers

	Total Ozone Solutions	Traditional
Daily therms used	35.00	58.33
Annual therms used	12,774.94	21,291.56
Cost per day to operate dryers	$35.00	$58.33
Annual gas cost for dryers	$12,774.94	$21,291.56

Water Savings Analysis

Hot Water/Total Water Analysis:	LIGHT SOIL		MEDIUM/HEAVY SOIL	
Traditional wash	**Cold**	**Hot**	**Cold**	**Hot**
Gallons per pound	0.350	1.4	0.225	2.025
Pounds per day	4,500	4,500	500	500
Gallons per day	1,575	6,300	113	1,013
Days per year	365	365	365	365
Total Gallons	574,875	2,299,500	41,063	369,563
Total Gallons Cold & Hot each	**615,938**	**2,669,063**		
Total Gallons		**3,285,000**		
Ozone wash				
Gallons per pound	1.350	0	1.400	0.35
Pounds per day	4,500	4,500	500	500
Gallons per day	6,075	0	700	175
Days per year	365	365	365	365
Annual Gallons	2,217,375	0	255,500	63,875
Total Gallons Cold & Hot each	**2,472,875**	**63,875**		
Total Gallons		**2,536,750**		

Savings Analysis Summary

	Total Ozone Solutions		Traditional	
Metered:				
Annual cost to heat water		**$497.03**		**$20,768.64**
Gallons of water/sewer	2,536,750		3,285,000	
Cost/1,000 gallons	$8.50		$8.50	
Annual cost for water/sewer		**$21,562.38**		**$27,922.50**
Total Utility Costs-Metered		**$22,059.40**		**$48,691.14**
Additional: (Unmetered)				
Annual cost for gas dryers		**$12,774.94**		**$21,291.56**
Washer and Dryer therms used		**13,271.96**		**42,060.20**

TOTAL OZONE SOLUTIONS

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Ozone Savings Analysis

TOS-103e

Days Hotel
8350 Edes Ave
Oakland, CA 94621

The savings projections are calculated from the data shown below. This data is based on information received from the customer, chemical representative and industry averages. Due to variations in operations and accuracy of data received, these numbers are intended as a guide to reflect potential savings.

	Assumptions:	Ozone	Traditional
	---	-	-
1	Gallons/pound - light soil	1.350	2.000
2	Gallons/pound - medium/heavy soil	1.750	2.500
3	Percentage hot water - light soil	0%	70%
4	Percentage hot water - medium/heavy soil *	20%	80%
5	Pounds/ per day	1,500	1,500
6	Percentage of linen - light soil	95%	95%
7	Percentage of linen - medium/heavy soil	5%	5%
8	Average ambient water temperature	65	65
9	Average hot water temperature at boiler/heater	150	150
10	Cost per therm of heating source	$1.00	$1.00
11	Cost of Water/sewer per/1,000 gallons **	$8.50	$8.50
12	Hours of dryer usage per day	5	9
13	Labor rate per pound	$0.08	$0.08
14	% Labor savings	10%	0%
15	Annual Linen Replacement ***	$15,000.00	$15,000.00
16	% Linen replacement savings	20%	0%
17	Days per year of operation	365	365
18	Total washing machine capacity	180	180

* Items 1-4 were compiled through testing done by nationally recognized washer mfg. Using a nationally known chemical co.'s traditional cycles vs. Total Ozone Solutions ozone cycles in conjunction with lab test swatches proving as good if not better results.
** Items 5-11 are actual costs / % / temperatures at your property/facility per your records or if records were not available local avg's.
*** Item 15 is actual cost per your records or industry averages per a nationally recognized consulting firm.

Savings Summary

Gas and Water Savings:

Hot Water Gallons Saved Annually	**98.78%**	**773,344**
Total Gallons Saved Annually	**32.35%**	**358,613**
Therm Savings from Washer Hot Water Reduction		**6,819.93**
Therm Savings from Dryer Usage Reduction		**2,554.99**

Annual Dollar Savings:

Annual Water Savings from Total Water Reduction	**$3,048.21**
Annual Gas Savings from Hot Water Reduction	**$6,819.93**
Annual Dryer Savings from Reduced Drying Time	**$2,554.99**
Annual Laundry Labor Savings	**$4,380.00**
Annual Linen Replacement Savings	**$3,000.00**

Annual and Monthly Utility and Total Savings:

Annual Utility Savings		**$12,423.12**
Monthly Utility Savings	**$1,035.26**	
Annual Total Savings from Total Ozone Solutions		**$19,803.12**
Monthly Total Savings from Total Ozone Solutions	**$1,650.26**	

System and Rebates:

Complete ozone system	(Equipment $10,250 Installation $3,745))	**$13,995.00**
Estimated Rebates Available to Property	PG&E Deemed: 7,020.00	**$7,020.00**
Cost of System after Estimated Rebate		**$6,975.00**

ROI:

Monthly ROI based on Utility Savings	**6.74**
Monthly ROI including additional Linen and Labor Savings	**4.23**

Ozone Savings Analysis
Days Hotel
Oakland, CA 94621
TOS-103e

Gas Savings Analysis - Washers

	Total Ozone Solutions	Traditional
Temperature rise in degrees	85	85
Annual gallons hot	**9,581**	**782,925**
Therms used	84.49	6,904.42
Cost/therm	$1.00	$1.00

Gas Savings Analysis - Dryers

	Total Ozone Solutions	Traditional
Daily therms used	10.50	17.50
Annual therms used	3,832.48	6,387.47
Cost per day to operate dryers	$10.50	$17.50
Annual gas cost for dryers	$3,832.48	$6,387.47

Water Savings Analysis

Hot Water/Total Water Analysis:	LIGHT SOIL		MEDIUM/HEAVY SOIL	
Traditional wash	**Cold**	**Hot**	**Cold**	**Hot**
Gallons per pound	0.600	1.4	0.500	2
Pounds per day	1,425	1,425	75	75
Gallons per day	855	1,995	38	150
Days per year	365	365	365	365
Total Gallons	312,075	728,175	13,688	54,750
Total Gallons Cold & Hot each	**325,763**	**782,925**		
Total Gallons		**1,108,688**		
Ozone wash				
Gallons per pound	1.350	0	1.400	0.35
Pounds per day	1,425	1,425	75	75
Gallons per day	1,924	0	105	26
Days per year	365	365	365	365
Annual Gallons	702,169	0	38,325	9,581
Total Gallons Cold & Hot each	**740,494**	**9,581**		
Total Gallons		**750,075**		

Savings Analysis Summary

	Total Ozone Solutions		Traditional	
Metered:				
Annual cost to heat water		**$84.49**		**$6,904.42**
Gallons of water/sewer	750,075		1,108,688	
Cost/1,000 gallons	$8.50		$8.50	
Annual cost for water/sewer		**$6,375.64**		**$9,423.84**
Total Utility Costs		**$6,460.13**		**$16,328.26**
Additional:				
Annual cost for gas dryers		**$3,832.48**		**$6,387.47**
Washer and Dryer therms used		**3,916.98**		**13,291.89**

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Ozone Savings Analysis

OS-102e

Holiday Inn Express Oakland Airport
66 Airport Access Road
Oakland, CA 94603

The savings projections are calculated from the data shown below. This data is based on information received from the customer, chemical representative and industry averages. Due to variations in operations and accuracy of data received, these numbers are intended as a guide to reflect potential savings.

	Assumptions:	Ozone	Traditional
	---	-	-
1	Gallons/pound - light soil	1.350	2.000
2	Gallons/pound - medium/heavy soil	1.750	2.250
3	Percentage hot water - light soil	0%	70%
4	Percentage hot water - medium/heavy soil *	20%	80%
5	Pounds/ per day	1,200	1,200
6	Percentage of linen - light soil	95%	95%
7	Percentage of linen - medium/heavy soil	5%	5%
8	Average ambient water temperature	65	65
9	Average hot water temperature at boiler/heater	125	125
10	Cost per therm of heating source	$1.00	$1.00
11	Cost of Water/sewer per/1,000 gallons **	$8.50	$8.50
12	Hours of dryer usage per day	4	7
13	Labor rate per pound	$0.08	$0.08
14	% Labor savings	10%	0%
15	Annual Linen Replacement ***	$10,000.00	$10,000.00
16	% Linen replacement savings	20%	0%
17	Days per year of operation	365	365
18	Total washing machine capacity	120	120

* Items 1-4 were compiled through testing done by nationally recognized washer mfg. Using a nationally known chemical co.'s traditional cycles vs. Total Ozone Solutions ozone cycles in conjunction with lab test swatches proving as good if not better results.
** Items 5-11 are actual costs / % / temperatures at your property/facility per your records or if records were not available local avg's.
*** Item 15 is actual cost per your records or industry averages per a nationally recognized consulting firm.

Savings Summary

Gas and Water Savings:

Hot Water Gallons Saved Annually	**98.77%**	**614,295**
Total Gallons Saved Annually	**31.93%**	**281,415**
Therm Savings from Washer Hot Water Reduction		**3,823.99**
Therm Savings from Dryer Usage Reduction		**2,043.99**

Annual Dollar Savings:

Annual Water Savings from Total Water Reduction	**$2,392.03**
Annual Gas Savings from Hot Water Reduction	**$3,823.99**
Annual Dryer Savings from Reduced Drying Time	**$2,043.99**
Annual Laundry Labor Savings	**$3,504.00**
Annual Linen Replacement Savings	**$2,000.00**

Annual and Monthly Utility and Total Savings:

Annual Utility Savings		**$8,260.00**
Monthly Utility Savings	**$688.33**	
Annual Total Savings from Total Ozone Solutions		**$13,764.00**
Monthly Total Savings from Total Ozone Solutions	**$1,147.00**	

System and Rebates:

Complete ozone system	(Equipment $9,000 Installation $2,500))	**$11,500.00**
Estimated Rebates Available to Property	PG&E Deemed: 4,680.00	**$4,680.00**
Cost of System after Estimated Rebate		**$6,820.00**

ROI:

Monthly ROI based on Utility Savings	**9.91**
Monthly ROI including additional Linen and Labor Savings	**5.95**

Ozone Savings Analysis
Holiday Inn Express Oakland Airport
Oakland, CA 94603
OS-102e

Gas Savings Analysis - Washers

	Total Ozone Solutions	Traditional
Temperature rise in degrees	60	60
Annual gallons hot	**7,665**	**621,960**
Therms used	47.71	3,871.70
Cost/therm	$1.00	$1.00

Gas Savings Analysis - Dryers

	Total Ozone Solutions	Traditional
Daily therms used	8.40	14.00
Annual therms used	3,065.98	5,109.97
Cost per day to operate dryers	$8.40	$14.00
Annual gas cost for dryers	$3,065.98	$5,109.97

Water Savings Analysis

Hot Water/Total Water Analysis:	LIGHT SOIL		MEDIUM/HEAVY SOIL	
Traditional wash	**Cold**	**Hot**	**Cold**	**Hot**
Gallons per pound	0.600	1.4	0.450	1.8
Pounds per day	1,140	1,140	60	60
Gallons per day	684	1,596	27	108
Days per year	365	365	365	365
Total Gallons	249,660	582,540	9,855	39,420
Total Gallons Cold & Hot each	**259,515**	**621,960**		
Total Gallons		**881,475**		
Ozone wash				
Gallons per pound	1.350	0	1.400	0.35
Pounds per day	1,140	1,140	60	60
Gallons per day	1,539	0	84	21
Days per year	365	365	365	365
Annual Gallons	561,735	0	30,660	7,665
Total Gallons Cold & Hot each	**592,395**	**7,665**		
Total Gallons		**600,060**		

Savings Analysis Summary

	Total Ozone Solutions		Traditional	
Metered:				
Annual cost to heat water		**$47.71**		**$3,871.70**
Gallons of water/sewer	600,060		881,475	
Cost/1,000 gallons	$8.50		$8.50	
Annual cost for water/sewer		**$5,100.51**		**$7,492.54**
Total Utility Costs-Metered		**$5,148.22**		**$11,364.24**
Additional: (Unmetered)				
Annual cost for gas dryers		**$3,065.98**		**$5,109.97**
Washer and Dryer therms used		**3,113.70**		**8,981.68**

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Ozone Savings Analysis

TOS-103e

Holiday Inn
77 Hegenberger Road
Oakland, CA 94621

The savings projections are calculated from the data shown below. This data is based on information received from the customer, chemical representative and industry averages. Due to variations in operations and accuracy of data received, these numbers are intended as a guide to reflect potential savings.

	Assumptions:	Ozone	Traditional
	---	-	-
1	Gallons/pound - light soil	1.350	2.000
2	Gallons/pound - medium/heavy soil	1.750	2.500
3	Percentage hot water - light soil	0%	70%
4	Percentage hot water - medium/heavy soil *	20%	80%
5	Pounds/ per day	1,500	1,500
6	Percentage of linen - light soil	95%	95%
7	Percentage of linen - medium/heavy soil	5%	5%
8	Average ambient water temperature	65	65
9	Average hot water temperature at boiler/heater	140	140
10	Cost per therm of heating source	$1.00	$1.00
11	Cost of Water/sewer per/1,000 gallons **	$8.50	$8.50
12	Hours of dryer usage per day	5	9
13	Labor rate per pound	$0.08	$0.08
14	% Labor savings	10%	0%
15	Annual Linen Replacement ***	$15,000.00	$15,000.00
16	% Linen replacement savings	20%	0%
17	Days per year of operation	365	365
18	Total washing machine capacity	150	150

* Items 1-4 were compiled through testing done by nationally recognized washer mfg. Using a nationally known chemical co.'s traditional cycles vs. Total Ozone Solutions ozone cycles in conjunction with lab test swatches proving as good if not better results.
** Items 5-11 are actual costs / % / temperatures at your property/facility per your records or if records were not available local avg's.
*** Item 15 is actual cost per your records or industry averages per a nationally recognized consulting firm.

Savings Summary

Gas and Water Savings:

Hot Water Gallons Saved Annually	**98.78%**	**773,344**
Total Gallons Saved Annually	**32.35%**	**358,613**
Therm Savings from Washer Hot Water Reduction		**6,017.58**
Therm Savings from Dryer Usage Reduction		**2,554.99**

Annual Dollar Savings:

Annual Water Savings from Total Water Reduction	**$3,048.21**
Annual Gas Savings from Hot Water Reduction	**$6,017.58**
Annual Dryer Savings from Reduced Drying Time	**$2,554.99**
Annual Laundry Labor Savings	**$4,380.00**
Annual Linen Replacement Savings	**$3,000.00**

Annual and Monthly Utility and Total Savings:

Annual Utility Savings		**$11,620.77**
Monthly Utility Savings	**$968.40**	
Annual Total Savings from Total Ozone Solutions		**$19,000.77**
Monthly Total Savings from Total Ozone Solutions	**$1,583.40**	

System and Rebates:

Complete ozone system	(Equipment $10,250 Installation $3,750))	**$14,000.00**
Estimated Rebates Available to Property	PG&E Deemed: 5,850.00	**$5,850.00**
Cost of System after Estimated Rebate		**$8,150.00**

ROI:

Monthly ROI based on Utility Savings	**8.42**
Monthly ROI including additional Linen and Labor Savings	**5.15**

Ozone Savings Analysis
Holiday Inn
Oakland, CA 94621
TOS-103e

Gas Savings Analysis - Washers

	Total Ozone Solutions	Traditional
Temperature rise in degrees	75	75
Annual gallons hot	**9,581**	**782,925**
Therms used	74.55	6,092.14
Cost/therm	$1.00	$1.00

Gas Savings Analysis - Dryers

	Total Ozone Solutions	Traditional
Daily therms used	10.50	17.50
Annual therms used	3,832.48	6,387.47
Cost per day to operate dryers	$10.50	$17.50
Annual gas cost for dryers	$3,832.48	$6,387.47

Water Savings Analysis

Hot Water/Total Water Analysis:	LIGHT SOIL		MEDIUM/HEAVY SOIL	
Traditional wash	**Cold**	**Hot**	**Cold**	**Hot**
Gallons per pound	0.600	1.4	0.500	2
Pounds per day	1,425	1,425	75	75
Gallons per day	855	1,995	38	150
Days per year	365	365	365	365
Total Gallons	312,075	728,175	13,688	54,750
Total Gallons Cold & Hot each	**325,763**	**782,925**		
Total Gallons		**1,108,688**		
Ozone wash				
Gallons per pound	1.350	0	1.400	0.35
Pounds per day	1,425	1,425	75	75
Gallons per day	1,924	0	105	26
Days per year	365	365	365	365
Annual Gallons	702,169	0	38,325	9,581
Total Gallons Cold & Hot each	**740,494**	**9,581**		
Total Gallons		**750,075**		

Savings Analysis Summary

	Total Ozone Solutions		Traditional	
Metered:				
Annual cost to heat water		**$74.55**		**$6,092.14**
Gallons of water/sewer	750,075		1,108,688	
Cost/1,000 gallons	$8.50		$8.50	
Annual cost for water/sewer		**$6,375.64**		**$9,423.84**
Total Utility Costs		**$6,450.19**		**$15,515.98**
Additional:				
Annual cost for gas dryers		**$3,832.48**		**$6,387.47**
Washer and Dryer therms used		**3,907.03**		**12,479.60**

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Ozone Savings Analysis

TOS-103e

Red Lion Hotel
150 Hegenberger Road
Oakland, CA 94621

The savings projections are calculated from the data shown below. This data is based on information received from the customer, chemical representative and industry averages. Due to variations in operations and accuracy of data received, these numbers are intended as a guide to reflect potential savings.

	Assumptions:	Ozone	Traditional
	---	-	-
1	Gallons/pound - light soil	1.500	2.000
2	Gallons/pound - medium/heavy soil	2.000	2.250
3	Percentage hot water - light soil	0%	70%
4	Percentage hot water - medium/heavy soil *	20%	80%
5	Pounds/ per day	2,500	2,500
6	Percentage of linen - light soil	95%	95%
7	Percentage of linen - medium/heavy soil	5%	5%
8	Average ambient water temperature	65	65
9	Average hot water temperature at boiler/heater	160	160
10	Cost per therm of heating source	$1.25	$1.25
11	Cost of Water/sewer per/1,000 gallons **	$8.50	$8.50
12	Hours of dryer usage per day	9	15
13	Labor rate per pound	$0.08	$0.08
14	% Labor savings	10%	0%
15	Annual Linen Replacement ***	$10,000.00	$10,000.00
16	% Linen replacement savings	20%	0%
17	Days per year of operation	365	365
18	Total washing machine capacity	160	160

* Items 1-4 were compiled through testing done by nationally recognized washer mfg. Using a nationally known chemical co.'s traditional cycles vs. Total Ozone Solutions ozone cycles in conjunction with lab test swatches proving as good if not better results.
** Items 5-11 are actual costs / % / temperatures at your property/facility per your records or if records were not available local avg's.
*** Item 15 is actual cost per your records or industry averages per a nationally recognized consulting firm.

Savings Summary

Gas and Water Savings:

Hot Water Gallons Saved Annually	**98.59%**	**1,277,500**
Total Gallons Saved Annually	**24.22%**	**444,844**
Therm Savings from Washer Hot Water Reduction		**12,591.36**
Therm Savings from Dryer Usage Reduction		**4,258.31**

Annual Dollar Savings:

Annual Water Savings from Total Water Reduction	**$3,781.17**
Annual Gas Savings from Hot Water Reduction	**$15,739.20**
Annual Dryer Savings from Reduced Drying Time	**$5,322.89**
Annual Laundry Labor Savings	**$7,300.00**
Annual Linen Replacement Savings	**$2,000.00**

Annual and Monthly Utility and Total Savings:

Annual Utility Savings		**$24,843.26**
Monthly Utility Savings	**$2,070.27**	
Annual Total Savings from Total Ozone Solutions		**$34,143.26**
Monthly Total Savings from Total Ozone Solutions	**$2,845.27**	

System and Rebates:

Complete ozone system	(Equipment $10,250 Installation $4,250)	**$14,500.00**
Estimated Rebates Available to Property	PG&E Deemed: 6,240.00	**$6,240.00**
Cost of System after Estimated Rebate		**$8,260.00**

ROI:

Monthly ROI based on Utility Savings	**3.99**
Monthly ROI including additional Linen and Labor Savings	**2.90**

Ozone Savings Analysis
Red Lion Hotel
Oakland, CA 94621
TOS-103e

Gas Savings Analysis - Washers

	Total Ozone Solutions	Traditional
Temperature rise in degrees	95	95
Annual gallons hot	**18,250**	**1,295,750**
Therms used	179.88	12,771.24
Cost/therm	$1.25	$1.25

Gas Savings Analysis - Dryers

	Total Ozone Solutions	Traditional
Daily therms used	17.50	29.17
Annual therms used	6,387.47	10,645.78
Cost per day to operate dryers	$21.87	$36.46
Annual gas cost for dryers	$7,984.34	$13,307.23

Water Savings Analysis

Hot Water/Total Water Analysis:	LIGHT SOIL		MEDIUM/HEAVY SOIL	
Traditional wash	**Cold**	**Hot**	**Cold**	**Hot**
Gallons per pound	0.600	1.4	0.450	1.8
Pounds per day	2,375	2,375	125	125
Gallons per day	1,425	3,325	56	225
Days per year	365	365	365	365
Total Gallons	520,125	1,213,625	20,531	82,125
Total Gallons Cold & Hot each	**540,656**	**1,295,750**		
Total Gallons		**1,836,406**		
Ozone wash				
Gallons per pound	1.500	0	1.600	0.4
Pounds per day	2,375	2,375	125	125
Gallons per day	3,563	0	200	50
Days per year	365	365	365	365
Annual Gallons	1,300,313	0	73,000	18,250
Total Gallons Cold & Hot each	**1,373,313**	**18,250**		
Total Gallons		**1,391,563**		

Savings Analysis Summary

	Total Ozone Solutions		Traditional	
Metered:				
Annual cost to heat water		**$224.85**		**$15,964.04**
Gallons of water/sewer	1,391,563		1,836,406	
Cost/1,000 gallons	$8.50		$8.50	
Annual cost for water/sewer		**$11,828.28**		**$15,609.45**
Total Utility Costs		**$12,053.13**		**$31,573.50**
Additional:				
Annual cost for gas dryers		**$7,984.34**		**$13,307.23**
Washer and Dryer therms used		**6,567.34**		**23,417.02**

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Allison Chan

From: Cal Eshbach
Sent: Thursday, December 04, 2014 11:26 AM
To: 'Jill Sunahara'
Cc: 'Heather Larson'; 'Grant Cooke'; 'Karen Kho'; 'Stephanie Stern'
Subject: RE: Cost info for Water-Energy Grant

Jill, unfortunately I just lost the entire answer to your message below that took a lot of time to research and prepare but hopefully I can recreate this timely because of more obligations I have today. Not being sure of all you need on the forms from us, I will provide a bullet point discussing each of the forms that seem to request information. Hopefully these comments will allow you to edit the forms as desired.

Att2:
I am not sure if you need additional data for sections number 3, 8, 9 and 10 on this form. This is not information we would be able to provide.

Att3:
Under the Project Description section you asked for the number of employees, number of rooms and, in the case of Bay Linen, their hotel customers. The only area that I can be of assistance is the number of rooms for the hotels since I don't have the other information. They are: Red Lion #189, Holiday Inn Express #95, Holiday Inn #146 and Days Hotel #138. Regarding a sentence on the property, we feel you can better create this description since you know what would better assist as related to your request for a grant.

Att4:

- The link you reference regarding the PG&E Customized Retrofit Incentive looks good. This is the new name for the NRR-Dr incentive.
- Yes, as shown above, each of the hotels have less than 250 rooms per their websites. As a result, they would qualify for the Deemed program.
- In our 10 years of working with PG&E, we have never had an incentive rejected. Regarding whether our company would cover the remaining cost, we cover this in our Purchase Agreements signed by our customers with the following: "*It is understood that Customer will be the responsible party in ensuring all requirements of the Utility Provider's rebate/incentive contract or agreement are met. TOS will assist Customer in any manner possible to help in this pursuit but will not be held responsible by the Utility Company or Customer in any way as a result of this assistance.*" We will not commit to being responsible for the rebate. If this is a serious concern, my suggestion is to talk with PG&E to get a level of comfort regarding any possibility of a rejection, whether for a deemed application or customized application where pre-approval from PG&E is required prior to system purchase. If the customer is required to cover the difference and this is explained in the presentation of the program, my expectations are that they will not proceed with the project.
- The total costs for the projects would need to be adjusted for the applicable sales tax (9% as you mentioned in your earlier message?) and possible shipping costs. In researching past costs, the typical cost was $200. You might want to bump this up to $250 to cover any unknown situations.

I hope this helps in completing your application. Let me know if I missed a question.

Cal Eshbach
Total Ozone Solutions
Office: 866-696-6348
Fax: 916-237-4366
Mobile: 281-923-6665

Supporting Documentation for Project #4

Oakland USD School Upgrades

To: Jill Sunahara/
From: Yvonne Tom/Leadership in Energy Efficiency Program
Date: Dec. 5, 2014
RE: Description of energy-water measures for Oakland USD's 2 High Schools: Castlemont and McClymonds

Cc: Puck Ananta/LEEP
Caine Chan/OUSD
Heather Larson/StopWaste
Hannah Wood/OUSD

1. Utilize existing new pool covers with power winder. Oakland USD will be installing free pool covers in Dec, 2014, courtesy of a PG&E 3rd party program. However, it is often the case that even with new pool covers that save energy and water from water evaporation are underutilized. In fact, on the day of a site inspection, the pool was uncovered despite a week-long school vacation. This proposal will assist the grounds and custodial staff in making it easier to use the pool cover, reduce the number of staff needed to use the pool cover, and ensure savings are actually realized.
    a. It is estimated that the pool covers will save 501,580 gal/yr at the two pools.
    b. Because the pools are heated, this measure is estimated to save 6,526 therms/yr.
    c. The cost of the power winder is $9,000 with a payback of 3.93 years
2. Install variable frequency drive (VFD) for the pool pumps. These pools are linked to a pool pump that is working at a 100% level 24/7. The purposed of the VFD is to reduce the speed when the pool is not being used or is less utilized. This measure will save:
    a. 91,368 kWh/yr at the two pools
    b. The cost of this measure is estimated at $16,520 with a payback of 1.4 years
3. Fix leaking faucet in kitchen (at McClymonds)
    a. Estimated water savings is 1,000 gal/yr with a cost to fix (in-house) of $225.
4. Add two aerators in kitchen hand washing stations, reducing the water flow rate from 8 gallons/minute to 0.5 gallons/minute (at McClymonds)
    a. Estimated water savings is 2,000 gal/yr with a cost to install the aerators (in-house) of $54.
5. Install cogeneration at each pool. Cogeneration allows one energy unit (therm) to produce heat to the pools and showers and energy to the school site. While we have not analyzed the demand requirements of the high school site and the amount of heat needed for pools/showers/bathrooms, a 60 kW microturbine is commonly used for this purpose.
    a. Estimated energy savings and increase in energy use:
        i. 660,514 kWh/yr savings
        ii. (46,188) therms/yr used in lieu of the kWh savings

    b. Estimated cost is $450,000 with an annual savings in energy costs of $110,662 and a payback of 4 years
6. Install commutated (digital) motor in walk-in cooler in kitchen; replace gaskets, and add auto door closer (at Castlemont)
    a. These measure will save energy by providing a more efficient motor, reducing cold air leakage, and having the door manually close after each use.
    b. Energy savings are estimated to be 2,842 kWh/yr and a cost savings of $374/yr.
    c. The estimated cost for these measures are $1,802 with an estimated payback of 4.8 years
7. Install scheduling controls for hot water heater booster pumps (at Castlemont) that will schedule when the pumps when not in use
    a. Energy savings are estimated to be 18,221 kWh/yr and cost savings are estimated to be $22,972.
    b. Estimated savings/yr are $2,396 with a payback of 9.6 years.

Supporting Documentation for Project #5

San Leandro USD School Upgrades

December 10, 2014

San Leandro High School
2220 Bancroft Ave.,
San Leandro, Ca. 94577

Re: Solar Pool Heating at San Leandro High School
Dear Greg Dyer:

This Scope Letter, including all attachments and addenda, when countersigned by you, will form a binding agreement (the "Letter Agreement") between San Leandro High School located at the above address (the "Client"), and Sun Light & Power located at 1035 Folger Avenue, Berkeley, CA 94710 ("SLP"), for the design and installation of a Solar Water Heating system to be built on the premises located at 2200 Bancroft Ave., San Leandro High (the "Project"). Sun Light & Power proposes to perform the solar portion of the work at the above-referenced project address in accordance with the referenced drawings and specifications, and the following clarification of scope. Contract Price assumes that Prevailing Wages will apply and that Union Labor is NOT required.

Contract Price for Competition pool:	**$426,352**
Estimated Rebate (CSIT):	**-$50,319**
Net Cost after rebate:	**$376,033**

Allowances (included in price but estimated only)

Shade Structure:	**$98,000**
Lighting:	**$8,500**
Piping tap between filter and heater	**$4,500**
Trenching and repair:	**$10,000**

Contract Price for Instructional pool:	**$134,927**
Estimated Rebate (CSIT):	**-$17,416**
Net cost after Rebate:	**$117,511**

Allowances (included in price but estimated only)

Piping tap between filter and heater:	**$4,500**
Trenching and repair:	**$10,000**

Total net cost after rebates

1. **Scope of Work**

System Components Competition Pool:

(80) Gobi 410 4x10 flat plate collectors
(1) Pool heat exchange assembly for 3200 SF of collector area including

Single wall heat exchanger
Pentair pool side pump pump
Grundfos glycol side cast iron pump
Delta-T pro control with Ethernet connection

(1) Non-potable expansion tank
Shade structure to match existing PV shade structure
Solar specific valves and fittings (TPRV's, PRV's, air vents, balancing valves, etc.)

System Components Instructional Pool:

(29) Gobi 410 4x10 flat plate collectors
(1) Pool heat exchange assembly for 1200 SF of collector area including
Single wall heat exchanger
Pentair pool side pump
Grundfos glycol side cast iron pump
Delta-T pro control with Ethernet connection

(1) Non-potable expansion tank
Solar specific valves and fittings (TPRV's, PRV's, air vents, balancing valves, etc.)

Description of the Work: -

1. Design all system components to meet standard code requirements
2. Generate submittal drawings and interface with the site designers
3. Coordinate with Client or Client's representative on installation specification and timeline
4. Secure a permit for the solar portion of the project from the appropriate jurisdiction
5. Plumb new solar trunk lines from equipment location to collectors
6. Coordinate with subs on roofing details
7. Lift necessary equipment to roof and shade structure
8. Set mounts for collectors on roof, assumes standard L bracket on top of sheet metal roof
9. Install shade structure
10. Install racking for solar thermal collectors
11. Install collectors on rack
12. Set heat exchanger and pumps package
13. Tap piping between filters and heaters
14. Plumb from pool piping to heat exchange package
15. Plumb from heat exchanger package to trunk line
16. Install required valves sensors and gauges
17. Complete plumbing to collectors
18. Plumb pressure relief valves and temperature pressure relief valves to drain provided by others
19. Complete wiring to pumps and controls
20. Charge system with glycol
21. Commission system and provide operation and maintenance manual
22. Insulate piping per 2013 California energy code, jacket insulation exposed to UV radiation with aluminum cladding
23. Apply for California Solar Initiative-Thermal rebate
24. Warranties: 1 year workmanship
    10 year on the collectors

Assumptions:

1. Collector mounting and tank area are structurally sound and no structural upgrades are required.

2. All areas are accessible for installation of the specified equipment, If obstructions exist, others are to remove obstructions as needed.
3. Pressure relief valves on the solar tank will drain to the floor, or provided drain, or the exterior with maximum length of piping to be less than 20 linear feet.
4. Trenching assumes clear underground path to mechanical room from collectors
5. Shade structure design assumes standard DSA structures can be utilized for solar water heating systems. Soils are assumed to be adequate for standard shade structure installation
6. If internet based monitoring is required others to provide Cat5 cabling, internet connection and IT support.

Exclusions:

Any additions, changes, or alterations from the original drawings or specifications requested by Client, or changes required because of unforeseen conditions, or required by any public entity or utility will constitute extra work for which SLP will receive an equitable adjustment in the Contract Price and time for performing such changes.

1. Structural engineering or upgrades
2. Drain for relief valves in the mechanical room
3. Flashing and waterproofing of roof penetrations
4. Data connection to location of controls
5. IT support for internet based monitoring hook up
6. Electrical supply for pumps and control (110V 20A outlet)
7. Roof pads
8. Bond fees, permit fees, overtime, waterproofing, fireproofing
9. All site work including but not limited to grading, pier drilling, pier concrete, pier steel, equipment pads and prep, underground conduit and piping, trenching , backfill and compaction, spoils handling and removal, fencing, restoring surfaces.
10. All other materials and installation except those listed under “Description of Work” above

2. Rebates and Incentives

Rebates, if any, are estimated based on current incentive levels, and are based on the therms produced. These rebates, if any, are paid upon approval of final application which occurs approximately 8 weeks after commissioning of the system. The rebate levels are subject to change based on the program guidelines and California state budgeting. With regard to federal tax credits, Client is responsible for consulting a tax professional and must not rely on the advice of statements of SLP.

3. Change Orders

Either Party may request a change to the Work (a “Change Order Request”) by written notice to the other Party in the form containing (i) a detailed description of such proposed changes in the Work, (ii) a good faith estimate of such proposed change’s effect, if any, on the build schedule and the Contract Price including, as applicable, labor and material and other cost information. The non-requesting Party shall in its sole discretion approve or disapprove any Change Order within five (5) business days of its receipt. Upon approval from the non-requesting Party, such Change Order Request shall become a binding part of the Scope of Work, shall be deemed attached to the Scope of Work and incorporated herein by reference, shall become a part of this Letter Agreement, and shall be referred to herein as a “Change Order”. If Client decides not to issue a Change Order after having issued a Change Order Request, SLP shall be paid an amount equal to SLP ’s actual direct cost of providing engineering services necessary to respond to Client’s Change Order Request plus a fifteen percent (15%) mark-up for overhead and profit.

4. **Payment**

SLP will provide invoices in accordance with a schedule of values to be agreed upon with the Client. The Client shall make payment to SLP not later than thirty (30) days after the invoice date regardless of any dispute that may arise concerning such amounts due. Adjustment may be made to the invoice to be issued by SLP in the following month, if any.

Prices are good for 60 days from the date of this Scope Letter.

The attached Terms and Conditions are incorporated into this Letter Agreement are made part of it.

Sun Light & Power:	**Client: _____**
By: _____	By: _____
Gary T. Gerber	_____
Its: President	Its: _____
Date: _____	Date: _____

1035 FOLGER AVENUE, BERKELEY, CA 94710
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