

Main project:City of Svl- Pax Mixer Water Department- PAX Mixer

Market Channel: **PG&E Sales**
 Program Classification: **Customized Retrofit**
 Partner:
 Workflow Type: **Custom**
 Site Name: **CITY OF SUNNYVALE - WS/MARY
 AVE APPRX 200 - SUNNYVALE**
 Created from Lead:
 Audit:

Program: **Commercial Calculated Incentives -
 Customized Retrofit**
 Project ID: **COCRIPGE13-023272**
 Primary Project Contact: **John Ramirez**
 Project Sponsor:
 Project Sponsor Contact:
 Customer Payee:
 Primary Contractor:

Project Description

Installing PAX water mixers to decrease stratification as well as pump deep cycling operation.

SA's included in this application;

Mary-Carson Plant: 6022590678

Wolfe-Evelyn Plant: 6022590253

Wright Plant: 6022590651

Hamilton Plant: 6517065153

Project Summary

Total kW Savings: 0

Project Cap Adjustment: \$0.00

Total kWh Savings: 268,423

Total Project Costs: \$170,425.70

Total Therms Savings: 0

Total Uncapped Incentive Amount: \$21,473.84

Total Incentive Amount: \$21,473.84

Contractor Incentive: \$0.00

Customer Incentive: \$21,473.84

Additional Incentive:\$0.00

Project Measure

PROCESS RETROFIT/NEW-OTHER ELECTRIC-MODIFY PROCESS

Pre-Field Report

Pre-Field Report Conducted: Yes

Initial Site Visit : 12/8/2014 12:00:00 AM

Site Inspection Overview: The first site inspection was performed on 12/8/2014 at the following locations:

Wright Plant, 1779 Wright Ave. Sunnyvale, CA 94087, Plant capacity = 10,000,000 gallons (2-5,000,000 gallon tanks)

Hamilton Plant, 1200 S. Bernardo Ave. Sunnyvale, CA 94087, Plant capacity = 1,500,000 gallons (3-500,000 gallon tanks)

Mary-Carson Plant, 155 Mary Ave. Sunnyvale, CA 94086, Plant capacity = 10,000,000 gallons (2-5,000,000 gallon tanks)

Wolfe-Evelyn Plant, 753 Ajax Dr. Sunnyvale, CA 94086, Plant capacity = 5,000,000 gallons (1-5,000,000 gallon tank)

These plants carry out two main functions:

- Storage of water (pumps continually deep-cycling water to prevent stratification, therefore water quality)
- Responding to residential/commercial demand (pumping water to an external location when needed)

The goal for this project is to install a PAX water mixer in each tank which will decrease the deep-cycling requirement from the pumps by 1/2. This means the required annual pump operation will decrease by 50%.

After this preliminary inspection Vincent DiCicco (PG&E engineer) worked with Kevin Woodworth and John Ramirez (City of Sunnyvale) over a few months to trend each of the pumps to determine baseline power consumption for analysis.

Statement of Influence: Sunnyvale PAX Mixer Project: Statement of Influence

The City of Sunnyvale and PG&E ES&S have reviewed this potential energy efficiency opportunity since mid-2014. The City has indicated that they required the incentive to pursue the project and also required confirmation that energy savings would be achieved. PG&E's Energy Engineer provided substantial monitoring of systems and energy analysis from 12/14 through 6/15 to clarify actual savings and obtain

commitment by the customer.

Frank Arroyo (PG&E CRM)

Baseline Assumptions: Baseline required operation set by the customer for deep-cycling the tanks: 1-drawdown of the entire plant over 12 days. Each plant has multiple pumps that are used for both deep-cycling and reacting to demand. The 'proposed' baseline operation used in this analysis has been isolated for just the deep-cycling function of the pumps. Baseline operation reflects a single pump for each plant designated for the deep-cycling function, because it is capable of the task on its own.

Existing Equipment: Each plant currently uses various pumps to complete the deep-cycling of the tanks. The Wright Plant has (3) 50HP motors and (1) 25HP motor all of which are controlled with VFDs and has (2) 5 Million gallons tanks. The Mary –Carson Plant has (2) 200HP motors and (1) 150HP motor and do not have VFDs installed and has (2) 5 Million gallons tanks. The Wolfe-Evelyn Plant has (1) 150HP motor and (1) 200HP motor and do not have VFDs installed and has (1) 5 Million gallon tank. Each of these motors were trended and the average trended kW can be seen in “2K1500026654_Data Logging Results.xlsx”.

Proposed Equipment: The City of Sunnyvale is preparing to install PAX deep-cycling water mixers and water quality monitoring equipment at four of their potable water plants. The PAX water mixer is an active, submersible mixing system for cost-effective management of drinking water quality in storage tanks and reservoirs. The mixer installs easily without service disruptions or tank modifications, and mixes on-demand to rapidly eliminate stratification, uniformly distribute disinfectants and prevent conditions favorable to nitrification. Efficient and effective mixing of large volumes is made possible by the patented impeller’s characteristic axial jet which establishes a stable flow structure throughout the storage volume.

Each tank will have a PAX mixer installed. The table below details the PAX models that will go in each tank:

Plant	PAX Model	
	PWM200 (.575 kW/unit)	PWM500 (.825 kW/unit)
Wright		2
Hamilton	3	
Mary-Carson		2
Wolfe-Evelyn		1

The pump selected for proposed deep-cycling operation for each plant (see calculation methodology and calculation spreadsheet) will still operate. The goal is to reduce the annual operation of this pump by 50%.

Proposed equipment is not set to be ordered or installed until PG&E has approved the project for an incentive. This is why there was no completion date set on the application. Estimated completion data is 11/1/2015.

Existing Operation: The Wright, Mary-Carson, and Wolfe-Evelyn Plants only run on weekdays. Each of these plants must circulate the entire volume of water in the tanks every 12 days. Below is a table listing the duty cycle and average power draw for each motor at each plant:

Plant	Pump	Duty Cycle (%)	Average power draw (kW)
Wright	Pump 1 – 25HP	9.35	16.5
	Pump 2 – 50HP	2.56	30.0
	Pump 3 – 50HP	1.34	35.5
	Pump 4 – 50HP	15.46	34.7
Mary	Pump 1 – 150HP	16.21	100.4
	Pump 2 – 200HP	10.95	161.7
	Pump 3 – 200HP	2.68	147.4
Wolfe-Evelyn	Pump 1 – 150HP	3.99	97.3
	Pump 2 – 200HP	2.78	178.5

Proposed Operation: The PAX mixer is designed to operate 24/7, thereby reducing the operation of the deep-cycling pump. See calculation spreadsheet, '2K1500026654_PAX Project Calculations' for proposed operation of each plant under the new conditions with the PAX mixer in each tank.

Calculation Methodology: Calculations were performed for each plant using a custom spreadsheet titled, '2K1500026654_PAX Project Calculations.' Total project savings for Wright, Mary-Carson, and Wolfe-Evelyn Plants are summed below. Note: customer doesn't want to operate deep-cycling pumps on peak, therefore there are only program qualified energy savings.

Total Energy Savings (kWh) 268,423

Total Potential Incentive \$21,474

A chart was constructed in each of the tabs in the spreadsheet illustrating the isolated deep-cycling operation (both baseline and proposed operation) plotted against the past year's actual billing data for comparison.

The Hamilton Plant was removed from this incentive application after the pre-install calculations because relative to the baseline deep-cycling pump operation (NOT THE HISTORICAL USAGE) there are no savings for installing the PAX mixers. There will be significant actual realized savings, however, none that PG&E can qualify. See the Hamilton Plant tab in the calculation spreadsheet referenced above. Because the Hamilton Plant was not included as part of the qualified project, the cost of the 2 additional PAX mixers for Hamilton Plant were omitted from the project cost in the project summary.

Pre-Installation Inspection and Project Review

Pre-Inspection Required : False

Pre-Inspection Date : 12/8/2014 12:00:00 AM

Use Engineer's Pre-Field Report?: Yes

Reason Engineer's Pre-Field Not Used:

Pre-Installation Inspection: False

M&V Plan: Pass

Energy Savings: Approved

Site Inspection Overview (TR): The first site inspection was performed on 12/8/2014 at the following locations:

Wright Plant, 1779 Wright Ave. Sunnyvale, CA 94087, Plant capacity = 10,000,000 gallons (2-5,000,000 gallon tanks)

Hamilton Plant, 1200 S. Bernardo Ave. Sunnyvale, CA 94087, Plant capacity = 1,500,000 gallons (3-500,000 gallon tanks)

Mary-Carson Plant, 155 Mary Ave. Sunnyvale, CA 94086, Plant capacity = 10,000,000 gallons (2-5,000,000 gallon tanks)

Wolfe-Evelyn Plant, 753 Ajax Dr. Sunnyvale, CA 94086, Plant capacity = 5,000,000 gallons (1-5,000,000 gallon tank)

These plants carry out two main functions:

- Storage of water (pumps continually deep-cycling water to prevent stratification, therefore water quality)
- Responding to residential/commercial demand (pumping water to an external location when needed)

The goal for this project is to install a PAX water mixer in each tank which will decrease the deep-cycling requirement from the pumps by 1/2. This means the required annual pump operation will decrease by 50%.

After this preliminary inspection Vincent DiCicco (PG&E engineer) worked with Kevin Woodworth and John Ramirez (City of Sunnyvale) over a few months to trend each of the pumps to determine baseline power consumption for analysis.

Statement of Influence (TR): Sunnyvale PAX Mixer Project: Statement of Influence

The City of Sunnyvale and PG&E ES&S have reviewed this potential energy efficiency opportunity since mid-2014. The City has indicated that they required the incentive to pursue the project and also required confirmation that energy savings would be achieved. PG&E's Energy Engineer provided substantial monitoring of systems and energy analysis from 12/14 through 6/15 to clarify actual savings and obtain commitment by the customer.

Frank Arroyo (PG&E CRM)

Baseline Assumptions (TR): Baseline required operation set by the customer for deep-cycling the tanks: 1-drawdown of the entire plant over 12 days. Each plant has multiple pumps that are used for both deep-cycling and reacting to demand. The 'proposed' baseline operation used in this analysis has been isolated for just the deep-cycling function of the pumps. Baseline operation reflects a single pump for each plant designated for the deep-cycling function, because it is capable of the task on its own.

Existing Equipment (TR): Each plant currently uses various pumps to complete the deep-cycling of the tanks. The Wright Plant has (3) 50HP motors and (1) 25HP motor all of which are controlled with VFDs and has (2) 5 Million gallons tanks. The Mary –Carson Plant has (2) 200HP motors and (1) 150HP motor and do not have VFDs installed and has (2) 5 Million gallons tanks. The Wolfe-Evelyn Plant has (1) 150HP motor and (1) 200HP motor and do not have VFDs installed and has (1) 5 Million gallon tank. Each of these motors were trended and the average trended kW can be seen in "2K1500026654_Data Logging Results.xlsx".

Proposed Equipment (TR): The proposed measure is to install several PAX deep-cycling mixers and water quality monitoring equipment at the 3 plants. The PAX water mixer is an active, submersible mixing system which starts on demand to eliminate stratification and uniformly distribute disinfectants and prevent conditions favorable to nitrification. The Wright plant will have (3) PWN500 PAX units installed (.825 kW/unit). The Mary-Carson plant will have (2) PWM500 PAX units installed and the Wolfe-Evelyn Plant will have (1) PWN500 PAX unit installed.

The pumps at the plants will still operate but the hours of operation will be reduced by 50%. The estimated completion date is set at 11/1/15.

The gross measure cost is estimated to be \$170,425.70 which was provided by the customer within the application documents in the form of a quote from PAX water technologies. The PA approved incentive is less than 50% of the full measure costs, therefore it is not cost capped and the reviewer finds the measure cost reasonable. The measure cost will have to be verified in the IR stage with paid, itemized, material and labor invoices.

Existing Operation (TR): The Wright, Mary-Carson, and Wolfe-Evelyn Plants only run on weekdays. Each of these plants must circulate the entire volume of water in the tanks every 12 days. Below is a table listing the duty cycle and average power draw for each motor at each plant:

Plant	Pump	Duty Cycle (%)	Average power draw (kW)
Wright	Pump 1 – 25HP	9.35	16.5
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Wolfe-Evelyn	Pump 1 – 150HP	3.99	97.3
	Pump 2 – 200HP	2.78	178.5

Proposed Operation (TR): The proposed operation is for the new PAX system being installed at each site to operate 24/7 which will reduce the operation of the deep-cycling pumps. It is estimated that the pumps operating hours will be reduced by 50%. This will be substantiated in the IR with trending data.

Calculation Methodology (TR): The calculations were done using a customized excel spreadsheet. The below inputs were used to calculate the savings:

- Trended average power draw
- Rated flow of pump
- PAX power draw
- Motor efficiency
- Pump efficiency
- Plant capacity
- Number of day for complete turnover = 12

The following equations were used to calculate the energy and demand savings.

Baseline:

Actual flow = rated flow*(average trended power draw/rated full power draw) ^ (1/2.7)

Time for complete turnover = (plant capacity / actual flow) / 60

Hours/day of operation = Time for complete turnover/12

Baseline kWh = Trended average power draw*hours/day of operation*365* (5/7)

Proposed:

PAX energy usage = number of PAX units * wattage draw of PAX unit * 8760

Proposed kWh = baseline kWh/2 + PAX energy usage

Savings:

Energy Saved (kWh) = Baseline kWh – Proposed kWh

The site is located in Sunnyvale, CA, which is located within climate zone 4. The DEER peak

period days for climate zone 4 are the 1st, 2nd, and 3rd of September. In order to qualify for kW savings, equipment needs to operate not only during the specific days of DEER peak periods, but also during the hours of 2pm-5pm on those specific days. The equipment does not and will not operate during DEER peak periods and thus does not qualify for kW savings.

The calculations can be viewed in the file titled "2K1500026654_PAX Project Calculations PA revised.xlsx".

Additional Requirements

The following information is required at the IR stage:

- Paid, itemized material and labor invoices
- Specification sheets of the installed equipment
- Revised calculations, if necessary
- 3 weeks of monitoring at five minute interval for the following parameters:
 - Pump power draw for new pump operation
 - Power draw of the PAX system

*Please note that the trend data should be continuous and uninterrupted

References

Submitted files

- 2K1500026654_PAX Project Calculations.xlsx
- 2K1500026654_Data Logging Results.xlsx
- 2K1500026654_Installation Cost.pdf
- 2K1500026654_Datasheet_PWM500.pdf
- 2K1500026654_Pre-Field Pics_Sunnyvale PAX Project.docx
- 2K1500026654_Total Project Quote.pdf
- 141217 - CR Min Threshold Policy – Approved.pdf

Reviewer Calculations

- 2K1500026654_PAX Project Calculations PA revised.xlsx

2015 CUSTOMIZED RETROFIT - DEMAND RESPONSE AGREEMENT

This Agreement is entered into by [Pacific Gas and Electric Company] ("UTILITY") and the Project Sponsor (third party entity or UTILITY Customer if self-sponsored), as indicated. Project Sponsor agrees to review these terms and conditions. Any implementation of this project will be deemed the Project Sponsor's acceptance of these terms and conditions. If these terms and conditions are not acceptable, the Project Sponsor must notify UTILITY and refrain from any implementation of the project, otherwise will do so at their own risk.

Application Information

Project Name	City of Svl- Pax Mixer Water Department- PAX Mixer		
Project Number	COCRIPGE13-023272		
Application Number	2K1500026654		
Date Received	7/23/2015		
Calculated	X	M&V Required	

UTILITY Customer Information

Company Name			City of Sunnyvale	
John Ramirez			Corp Parent Name	
			Email	jramirez@sunnyvale.ca.gov
NA			Telephone	(408) 730-7560
NA	NA	99999	Fax	
Tax Status	Exempt Reason	COMPANY/CORP. FEDERAL TAX ID		

Project Sponsor Information

Company Name		Corp Parent Name if applicable
Tax Status	Exempt Reason	COMPANY/CORP. FEDERAL TAX ID

Site Information

Site Name	Site ID number if applicable
John Ramirez	Telephone (408) 730-7560

Electric Service Agreement ID

Gas Service Agreement ID

Utilities Commission ("CPUC").

Demand Response Projects must meet the following requirements to be eligible for incentives: (1) Project must be commercial, industrial, or agricultural and be located within UTILITY's service territory. (2) Customer must receive retail electric service from UTILITY. (3) Customer must have an existing electric meter that is capable of recording usage in 15 minute intervals and that can be read remotely by UTILITY. (4) Project site's associated service agreement must have a maximum demand greater than or equal to 200 kW within the last 12 billing months, or the facility must be able to demonstrate a load reduction greater than or equal to 30 kW.

(5) Projects will be evaluated using either the Calculated Savings Approach or the Measured Savings Approach (for measures requiring Measurement and Verification (M&V)). (6) Projects must meet all other CR-DR Program requirements. (7) Project Sponsor certifies that the dispatch-able peak reduction components of the Project have not and will not receive funds from any energy conservation program funded by the PPP fund, the CEC or the CPUC.

3.0 SUBMITTAL REQUIREMENTS FOR PAYMENT As a condition of payment, Project Sponsor shall submit to UTILITY the documents described below. Required documents include but are not limited to: 1) Completed, signed Application; 2) Complete engineering calculations and documentation to demonstrate energy savings, permanent peak demand reduction, and dispatch-able peak demand reduction (including archival diskette if applicable); 3) Schematic drawings and/or manufacturer specification sheets if applicable; 4) Invoices and/or documentation to support Project cost at UTILITY'S request; 5) Additional Project-specific documents as requested by UTILITY prior to payment of incentives; and 6) Operating Report if the Measured Savings Approach is used.

4.0 INSPECTIONS As a condition of payment, Project Sponsor is responsible for ensuring that UTILITY has reasonable access for all inspections, including but not limited to those described below: 1) CR-DR Pre-Installation Equipment Inspection to examine the existing/baseline equipment and to check the accuracy of Project Sponsor's equipment survey; 2) CR Post-Installation Equipment Inspection to check installed equipment and to verify accuracy of Project Sponsor's equipment survey; 3) DR Post-Installation dispatchable load reduction demonstration(s); 4) CR-DR Post-operation inspection to check the energy savings of the Measures after installed equipment has been operating. This inspection can take place after the Operating Report has been submitted or earlier, at UTILITY's discretion.

5.0 REVIEW AND DISCLAIMER UTILITY'S AND/OR ITS CONSULTANTS' REVIEW OF THE DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE OF THE PROJECT, ENERGY EFFICIENCY MEASURES, OR DEMAND RESPONSE MEASURES DO NOT CONSTITUTE ANY REPRESENTATION AS TO THE ECONOMIC OR TECHNICAL FEASIBILITY, OPERATIONAL CAPABILITY, OR RELIABILITY OF THE PROJECT MEASURES. PROJECT SPONSOR SHALL IN NO WAY REPRESENT TO ANY THIRD PARTY THAT UTILITY'S REVIEW OF THE MEASURES OR PROJECT, INCLUDING, BUT NOT LIMITED TO, UTILITY'S AND/OR ITS CONSULTANTS' REVIEW OR ANALYSIS OF THE DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE OF THE MEASURES OR PROJECT, IS A REPRESENTATION BY UTILITY AS TO THE ECONOMIC OR TECHNICAL FEASIBILITY, OPERATIONAL CAPABILITY, AND RELIABILITY OF SUCH MEASURES OR PROJECT. PROJECT SPONSOR IS SOLELY RESPONSIBLE FOR THE ECONOMIC AND TECHNICAL FEASIBILITY, OPERATIONAL CAPABILITY AND RELIABILITY OF PROJECT SPONSOR'S PROJECT AND MEASURES.

6.0 PAYMENTS Incentive payments will only be paid after all CR-DR requirements are met by Project Sponsor to Utility's satisfaction. UTILITY retains sole discretion to determine the appropriate baseline values, dispatchable peak reduction and energy savings calculations used to determine incentive payments. Incentive payments shall only be paid on CR Projects that exceed Title 24 standards applicable when this Agreement is signed or industry standards in the absence of Title 24 standards. DR Projects are not subject to a standard baseline. UTILITY reserves the right to modify or cancel the incentive amount if the actual system installed differs from the installation in Project Sponsor's approved Application(s).

6.1 CR INCENTIVE PAYMENTS The total incentive payment under the Calculated Savings Approach or Measured Savings Approach shall not exceed the total incentive in the Final Approved CR Energy Savings Estimate (as presented on Page 2 of this Agreement). Projects with increased measure costs or installation of more efficient equipment are eligible for incentive payments above the total incentive, based on actual installed measure costs and energy savings from the actual installed equipment. Projects using the Measured Savings Approach are

eligible for up to an additional 10% of the approved incentive amount in the event that actual energy savings are higher than projected. See Program Manual for details. The total incentive payment may be limited as described in the Program Manual. The calculations shall be in accordance with the Program Manual. The following Energy Savings incentive rates shall apply for the types of retrofit projects: Basic Lighting, 3 cents/kWh; Basic Non-Lighting, 8 cents/kWh; Targeted Lighting, 8 cents/kWh; Targeted Non-Lighting, 15 cents/kWh; and Natural Gas, \$1.00/therm. All types of retrofit projects shall use a Peak Demand Reduction incentive rate of \$150/kW. UTILITY will make the applicable incentive payment to Customers, in one or more installments, only after the appropriate documents have been submitted and approved, and the appropriate inspections of the Project have been satisfactorily completed, in accordance with the rules set forth in the Program Manual. All Project(s) must be installed and fully operational by June 1, 2016. UTILITY reserves the right to cease making incentive payments, require the return of incentive payments and/or terminate this Agreement if the project(s) is not installed and fully operational by June 1, 2016. Energy savings for which incentives are paid cannot exceed the actual usage provided by the UTILITY. Non-utility supply, such as cogeneration or deliveries from another commodity supplier, does not qualify as usage from the UTILITY (with the exception of Direct Access customers or customers paying departing load fees for which the UTILITY collects PPP surcharges).

6.2 DR INCENTIVE PAYMENTS The total dispatch-able peak incentive payment under either the Calculated Savings or Measured Savings Approach shall not exceed the total incentive approved in the Approved Demand Response Dispatch-able Peak Demand Reduction Estimate (as presented in this Agreement), and is limited to \$300,000 per customer. The total dispatch-able peak demand reduction (DR) incentive is limited to 75% of the incremental DR measure cost. The calculations shall be in accordance with the Program Manual. The following dispatch-able peak reduction incentive rates shall apply for the projects DR program enrollment categories: AutoDRCategory 1, \$125/kW; Category 2, \$50/kW. Enrollment category 1 includes the following DR programs: AMP, BIP, CBP, PDP and PeakChoice with committed load reduction efforts option. Enrollment category 2 includes the following DR programs: DBP and PeakChoice Best Efforts Options. UTILITY will make the applicable incentive payment in one or more installments, only after the appropriate documents have been submitted and approved, and the appropriate inspections of the Project have been satisfactorily completed, in accordance with the rules set forth in the Program Manual. The first installment, 25% of the total DR incentive, will be paid upon successful post-field inspection, and completion and approval of the Post Installation Review. The last installment, and final 75% of the total DR incentive, will be paid after successful load reduction demonstration, completion of the DR Load Verification Review, and enrollment in a Demand Response Program. Customer must enroll in a DR program upon receiving the first incentive payment installment. The customer is required to stay in a DR program for three years. Customer can move from one DR program to another, within an enrollment category, according to PG&E tariff. Customer can change from Category 2 to Category 1, but not from Category 1 to Category 2. If the customer cancels out of the DR program prior to three years, UTILITY is entitled to a 100% refund of the incentive. The equipment needs to be in place for a period of not less than five years. All 2015 Project(s) must be installed and fully operational by June 1, 2016. UTILITY reserves the right to cease making incentive payments, require the return of incentive payments and or/terminate this Agreement if the Project is not installed and fully operational by December 31, 2016.

7.0 PAYMENT DISQUALIFICATION A prorated part of the incentives shall be repaid by Project Sponsor to UTILITY if: For CR Projects, Customer fails to pay the PPP surcharge throughout the Term of this Agreement. For DR Projects, Customer ceases to receive retail electric service from UTILITY any time throughout the Term of this Agreement. For both CR and DR Projects, UTILITY did not receive the energy benefit for which the incentive is paid, for a period of not less than five years.

7.1 Project Sponsor agrees that if 1) Project Sponsor does not provide UTILITY with 100 percent of the related benefits specified in the Application, for a period of five years from the UTILITY approved installation date, or 2) the energy benefit to UTILITY ceases (for example, if UTILITY Customer stops using the equipment, no longer pays the PPP surcharge, or discontinues retail electric service with UTILITY), Project Sponsor will return to UTILITY the prorated portion of the Incentive dollars based on the actual period of time for which UTILITY Customer provided the energy benefit.

7.2 Project Sponsor shall repay any payments made by UTILITY within 30 days of notification by UTILITY that repayment is required. UTILITY is entitled to offset against payments owed to Project Sponsor any amount due to UTILITY which remains unpaid 40 calendar days after UTILITY'S written demand for payment. Project Sponsor may designate in writing a third party to whom UTILITY shall make incentive payments.

8.0 TERM AND TERMINATION The Term of this Agreement shall commence on the last date that a Party executes this

Agreement and shall terminate no later than five years from the Project Installation Report approval date unless terminated earlier pursuant to this Agreement.

9.0 **ASSIGNMENT** Project Sponsor consents to UTILITY's assignment of all of UTILITY's rights, duties and obligations under this Agreement to the CPUC and/or its designee. Such assignment shall relieve UTILITY of all rights, duties and obligations arising under this Agreement. Other than UTILITY's assignment to the CPUC or its designee, neither Party shall assign its rights or delegate its duties without the prior written consent of the other Party, except in connection with the sale or merger of a substantial portion of its properties. Any such assignment or delegation without written consent shall be null and void. Consent to assignment shall not be unreasonably withheld. If an assignment is requested, the Project Sponsor is obligated to provide additional information if requested by UTILITY.

10.0 **PERMITS AND LICENSES** Project Sponsor, at its own expense, shall obtain and maintain licenses and permits needed to perform its work. Failure to maintain necessary licenses and permits constitutes a material breach of Project Sponsor's obligations.

11.0 **ADVERTISING, MARKETING AND USE OF UTILITY'S NAME** Project Sponsor shall not use UTILITY's corporate name, trademark, trade name, logo, identity or any affiliation for any reason, including to solicit customers to participate in the Project, without UTILITY's prior written consent. Project Sponsor shall make no representations to its customers on behalf of UTILITY.

12.0 **INDEMNIFICATION** Project Sponsor shall indemnify, defend and hold harmless, and releases UTILITY, its affiliates, subsidiaries, parent company, officers, directors, agents and employees, from and against all claims, demands, losses, damages, costs, expenses, and liability (legal, contractual, or otherwise), which arise from or are in any way connected with any: injury to or death of persons, including but not limited to employees of UTILITY or Project Sponsor; (ii) injury to property or other interests of UTILITY, Project Sponsor, or any third party; (iii) violation of local, state, or federal common law, statute, or regulation, including but not limited to environmental laws or regulations; or (iv) strict liability imposed by any law or regulation; so long as such injury, violation, or strict liability (as set forth in (i) - (iv) above) arises from or is in any way connected with Project Sponsor's performance of, or failure to perform, this Agreement, however caused, regardless of any strict liability or negligence of UTILITY whether active or passive, excepting only such loss, damage, cost, expense, liability, strict liability, or violation of law or regulation that is caused by the sole negligence or willful misconduct of UTILITY, its officers, managers or employees.

12.1 Project Sponsor acknowledges that any claims, demands, losses, damages, costs, expenses, and legal liability that arise out of, result from, or are in any way connected with the release or spill of any legally designated hazardous material or waste as a result of the work performed under this Agreement are expressly within the scope of this indemnity, and that the costs, expenses, and legal liability for environmental investigations, monitoring, containment, abatement, removal, repair, cleanup, restoration, remedial work, penalties, and fines arising from strict liability, or violation of any local, state, or federal law or regulation, attorney's fees, disbursements, and other response costs incurred as a result of such releases or spills are expressly within the scope of this indemnity.

12.2 Project Sponsor shall, on UTILITY's request, defend any action, claim or suit asserting a claim which might be covered by this indemnity. Project Sponsor shall pay all costs and expenses that may be incurred by UTILITY in enforcing this indemnity, including reasonable attorney's fees.

12.3 If this Agreement is assigned pursuant to Section 9.0, the Project Sponsor agrees that this indemnification shall continue to apply to UTILITY and shall apply to the assignee.

13.0 **LIMITATION OF LIABILITY** UTILITY shall not be liable for any incidental or consequential damages, including without limitation, loss of profits or commitments to Subcontractors, and any special, incidental, indirect or consequential damages incurred by Project Sponsor or its Customer.

14.0 **CPUC AUTHORITY TO MODIFY** This Agreement shall at all times be subject to such changes or modifications by the CPUC as it may from time to time direct in the exercise of its jurisdiction.

15.0 **INTEGRATION** This Agreement constitutes the entire agreement and understanding between the Parties as

to the subject matter of the Agreement. It supersedes all prior or contemporaneous agreements, commitments, representations, writings, and discussions between Project Sponsor and UTILITY, whether oral or written, and has been induced by no representations, statements or agreements other than those expressed herein. Neither Project Sponsor nor UTILITY shall be bound by any prior or contemporaneous obligations, conditions, warranties or representations with respect to the subject matter of this Agreement.

NO AMENDMENT, MODIFICATION OR CHANGE TO THIS AGREEMENT SHALL BE BINDING OR EFFECTIVE UNLESS EXPRESSLY SET FORTH IN WRITING AND SIGNED BY UTILITY'S REPRESENTATIVE AUTHORIZED TO EXECUTE THE AGREEMENT.

16.0 WRITTEN NOTICE Any written notice, demand or request required or authorized in connection with this Agreement, shall be deemed properly given if delivered in person or sent by facsimile, email, nationally recognized overnight courier, or first class mail, postage prepaid, to the address specified below, or to another address specified in writing by UTILITY.

UTILITY	
Program Manager	<u>Virginia Tiu</u>
Address	<u>Pacific Gas and Electric, Mail Code N8A, P.O. Box 770000</u>
City, State, Zip	<u>San Francisco, CA 94177</u>
Fax (facsimile)	<u>(415) 972-5155</u>
Email	<u></u>

PROJECT SPONSOR	
Project Sponsor	<u></u>
Address	<u></u>
Fax (facsimile)	<u></u>
Email	<u></u>

Notices shall be deemed received (a) if personally or hand-delivered, upon the date of delivery to the address of the person to receive such notice if delivered before 5:00 p.m., or otherwise on the Business Day following personal delivery; (b) if mailed, three Business Days after the date the notice is postmarked; (c) if by facsimile, upon electronic confirmation of transmission, followed by telephone notification of transmission by the noticing Party; (d) if by email; or (e) if by overnight courier: on the Business Day following delivery to the overnight courier within the time limits set by that courier for next-day delivery.

17.0 **CONFLICTS BETWEEN TERMS** Should a conflict exist between the main body of this Agreement and the Documents Incorporated by reference, the main body of this Agreement shall control. Should a conflict exist in the Documents Incorporated by reference, the Documents shall control in the following order: 1) Program Manual; 2) UTILITY acceptance letter(s) and incentive estimate(s) based on Measures as approved in Application(s); and 3) Project Sponsor's approved Application(s). Should a conflict exist between an applicable federal, state, or local law, rule, regulation, order or code and this Agreement, the law, rule, regulation, order or code shall control. Varying degrees of stringency among the main body of this Agreement, the Documents Incorporated by reference, and laws, rules, regulations, orders, or codes are not deemed conflicts, and the most stringent requirement shall control. Each Party shall notify the other immediately upon the identification of any conflict or inconsistency concerning this Agreement.

18.0 **CANCELLATION OF AGREEMENT** UTILITY may suspend or terminate the Agreement, without cause, upon written notice to Customer/ Project Sponsor.

This program is funded by California Utility Customers and administered by UTILITY under the auspices of the CPUC.