

CPUC Staff Ex Ante Review

CPUC Staff Project ID Number	PGE_24_T_C_949_PRJ - 04956254
CMPA Directory Link	https://deeresources.info/cmpa/projects/15264
PA	PGE
PA Application ID	PRJ - 04956254
PA Application Executed Date	
PA Program ID	PGE_Pub_009
PA Program Name	Willdan Public sector - Customized Retrofit
PA Program Year	
Date of CPUC Staff Review:	8/20/2024
PA CMPA Upload Dates Included in this review:	
First PA Upload	7/9/2024
Second PA Upload	N/A
Third PA Upload	N/A
Fourth PA Upload	
Fifth PA Upload	
Sixth PA Upload	
Seventh PA Upload	
Eighth PA Upload	
PA Measure Description(s):	
Measure 1	POOLS RETROFITNEW-OTHER
Measure 2	
Measure 3	
PA Project Description:	This project application is a resubmission of a project application that was originally submitted in April 2022 The original application was rejected during Ex-Ante review disposition issued on 9132022 CPUC Staff Project ID Number PGE_22_T_C_783_PRJ 03253058 This application is being submitted with a revised scope of work that addresses the comments received in the original Ex-Ante disposition
Bi-Monthly Upload kW Demand Reduction	0.0
Bi-Monthly Upload Annual kWh Impacts	-175,104.0
Bi-Monthly Upload Therm Impacts	34,274.2
PA Proposed Incentive \$ (to Customer)	\$230,000.00
Project Documentation kW Demand Reduction	0.0
Project Documentation Annual kWh Impacts	34,274.0
Project Documentation Annual Therm Impacts	-175,104.0
Project Documentation Incentive \$ (to Customer)	230,000.0
CPUC Staff Primary Reviewer Name	[REDACTED]
CPUC Staff Primary Reviewer Firm	Quantum Energy Analytics
CPUC Staff Review Supervisor Name	[REDACTED]
CPUC Staff Review Supervisor Firm	Quantum Energy Analytics
PA Primary Reviewer Name	
PA Primary Reviewer Firm	
CPUC Staff Project Manager	
CPUC Staff Policy Authorization (as needed)	
CPUC Staff Recommendation:	Application ready to proceed with exception(s), as noted
For rejection, action required:	N/A
M&V Review:	Post M&V Review NOT Required

Action Number:	Summary of CPUC Staff Required Action by the PA:	Action Category	PA Response	ED Resolution
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1	<p>The project involves replacing a gas pool heater at the end of its useful life with three heat pump pool heaters and a gas pony heater. The submitted Option C model used to estimate savings is based on average 'monthly' gas consumption data from 2019 through 2024 (pre-installation period), with the average monthly dry bulb temperature (DBT) as the only independent variable. The PA's M&V plan suggests using 2-4 weeks of post-installation monthly data to estimate final savings.</p> <p>There are several issues with the monthly usage vs. average monthly DBT model and the proposed M&V model:</p> <ol style="list-style-type: none"> 1)The model's reliance on a correlation between monthly gas consumption and DBT is insufficient, because DBT alone is not a predictor of monthly gas consumption. For example: <ol style="list-style-type: none"> a)Gas usage in October 2019 (~3,400 Therms) is significantly higher than in July 2022 (~800 Therms) and July 2023 (~720 Therms), despite similar average DBT (64°F). This suggests that other factors, not captured by the current model, are influencing gas consumption. b)October gas consumption in 2021, 2022, and 2023 is double that of September in the same years, despite varying decreases in temperature (3 degrees in 2021, 8 degrees in 2022, and 1 degree in 2023). This pattern indicates that pool usage-related activities, which are not accounted for in the current model, are impacting gas consumption. 2)The use of a 'monthly' gas model is problematic because it oversimplifies the operation of the pony heater, particularly during periods when temperatures fluctuate around or below 50.5°F. The proposed heat pump pool heaters require a minimum outside air temperature above 50.5°F to operate effectively. When temperatures fall below this threshold, the gas pony heater is expected to supplement the heating load. The model assumes that the pony heater is used only during one month per year (typically January), when the average monthly temperature is 50.4°F, and that it meets 80% of the heating load during this period. In contrast, the model assumes that the pony heater is not needed at all in February, despite an average DBT is 50.6. This oversimplification highlights the need for a more granular (hourly or daily) model to accurately capture the operation of the heating system under varying conditions. 3)The model allows for the pony load portion to be increased to 100% of the heating load, despite its output is rated at 500 kBtu/h, which is significantly lower than the original boiler rated at 1,488 kBtu/h. 4)The PA's proposed M&V period of 2-4 weeks post-installation, presumably during Fall 2024, is insufficient to confirm the accuracy of any monthly model. Such a short period is unlikely to capture the full range of operating conditions needed to validate the model. <p>The PA should:</p> <ol style="list-style-type: none"> 1.Extend Data Collection Duration: The PA should extend the post-installation data collection period to at least 3-6 months. This duration should cover a range of ambient temperatures, including periods both above and below the 50.5°F threshold, to accurately capture the range of weather conditions during which the pool operates. This will help to confirm that the new heating system can adequately meet the heating load in any weather conditions. 2.Daily (or hourly) Data Analysis: The model should shift from a monthly analysis to a daily (or more granular) analysis of gas consumption. This approach will allow for a better understanding of how gas consumption varies under different operating conditions. The new mode should separately aggregate data for "pool open" hours (when the pool is in use, and the cover is off) and "pool closed" hours (when the pool is not in use, and the cover is on). Since temperatures below 50.5°F are more likely to occur at night, any inability of the system to maintain pool temperature during these hours may be less consequential than during daytime open hours. 3.Eliminating Non-Routine Events: The model should exclude data from non-routine events that affect energy consumption. This may include pool closures for holidays, scheduled maintenance, or ad hoc repairs, and pool drainage. 4.Account for Lag Time in Weather Changes: The model should consider the lag between changes in DBT and their impact on heating load. Given the thermal storage capabilities of the pool water, there may be a delay before temperature changes translate into increased or decreased heating demand. 	Calculation method		
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Note or Instruction Number:	CPUC Staff Notes or Instructions:	Instruction Category	PA Response	ED Resolution
1	This is the resubmission of a rejected project (original CPR ID was 783).	Other 1		
2	The post-installation report should clearly document how the operation of the gas pony chiller and heat pumps are controlled with supporting documentation.	Other 2		
3	The post-installation report should clearly document the cost of equipment with invoices (showing make, model, unit price, and quantity of equipment, the vendor name and address, the customer's name and address, the invoice number, the date of sale, and the total cost) and the invoices from the installation contractor.	Measure cost		

CPUC Staff Recommendation Definitions	
CPUC Staff Recommendation	Definition
Application ready to proceed without exception	The PA will continue to upload application documents to the CMPA directory through the implementation and claims phases of the project. The PA may proceed to approve the project without waiting for CPUC Staff response. A project is waived from further review at the post-installation stage by CPUC staff, but the PA is responsible for post-installation (IR) review. There will not be conditional approval.
Application ready to proceed with exception(s), as noted	<p>The PA must make revisions or changes as noted in CPUC Staff's review comments before signed agreement with customer. The PA will continue to upload application documents to the CMPA directory through the implementation and claims phases of the project. The PA may proceed to approve the project without waiting for CPUC Staff response. If CPUC Staff decides to perform IR review of a project, CPUC Staff will notify the PA. The scope will be limited to determine if the project was carried out consistent with the application and notes provided during pre-installation review and to obtain information pertaining to whether the eligibility criteria or metrics should be revised.</p> <p>Unless the scope of work presented in project application has changed at IR review, the project will not be reviewed again in the areas specified below. Scope change is defined by substantial changes include significant modifications to the proposed equipment type, size, quantity, configuration, the expansion of a project to include additional retrofits, or the splitting of a project into multiple phases. The following areas will not be reviewed again by CPUC Staff:</p> <ul style="list-style-type: none"> • Calculation Tool • Calculation Methodology • M&V Plan • Baseline • Eligibility • EUL/RUL • Measure Type • Program Influence
Application rejected.	<p>The application is rejected as submitted. The PA shall promptly inform the applicant as to the reasons why the project was rejected and the specific recommendations for the conditions under which the project would be approved. CPUC Staff shall provide the reasons for the rejection or request for modification, including each basis as to why the project is rejected, or modification is requested. In addition, CPUC Staff shall provide specific recommendations for the conditions under which the project would be approved.</p> <p>If any party to the project is unsatisfied with the Commission's directions for the project, a dispute resolution process may be initiated by that party. The Commission shall adopt rules for the conduct of the dispute resolution process. – Section 381.2 (g) (3) (F)</p>
Advisory.	The PA is not formally required to follow instructions or recommendations given in an Advisory review. However, issues found will affect ESPI scoring and may come up again in Ex-Post review.