

## CPUC Staff Ex Ante Review

CPUC Staff Project ID Number	PGE_23_T_I_894_PRJ - 04197166_HVAC
CMPA Directory Link	<a href="https://deeresources.info/cmpa/projects/21012">https://deeresources.info/cmpa/projects/21012</a>
PA	PGE
PA Application ID	PRJ - 04197166
PA Application Executed Date	
PA Program ID	PGE_Ind_003
PA Program Name	Cascade - INDUSTRIAL SYSTEMS OPTIMIZATION PROGRAM ISOP - Customized Retrofit
PA Program Year	
Date of CPUC Staff Review:	9/29/2023
PA CMPA Upload Dates Included in this review:	
First PA Upload	8/23/2023
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	missing
Measure 2	
Measure 3	
Measure 4	
Measure 5	
Measure 6	
Measure 7	
Measure 8	
Measure 9	
Measure 10	
PA Project Description:	Install an AOE heat recovery heat exchanger on one of four glass furnaces at a glass bottle manufacturer to recover approximately 85 MM btuhr of waste heat
Bi-Monthly Upload kW Demand Reduction	0.0
Bi-Monthly Upload Annual kWh Impacts	0.0
Bi-Monthly Upload Therm Impacts	1,174,438.0
PA Proposed Incentive \$ (to Customer)	\$1,000,000.00
Project Documentation kW Demand Reduction	0.0
Project Documentation Annual kWh Impacts	0.0
Project Documentation Annual Therm Impacts	1,174,438.0
Project Documentation Incentive \$ (to Customer)	1,000,000.0
CPUC Staff Primary Reviewer Name	
CPUC Staff Primary Reviewer Firm	DNV
CPUC Staff Review Supervisor Name	
CPUC Staff Review Supervisor Firm	DNV
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 submitted savings analysis is based on 241 days of production data between 1/7/22 and 1/6/23. The production data does not appear to include weekends. It is unclear if Furnace (the host equipment) produces glass product on weekends. If it does, please revise the savings analysis to reflect weekday and weekend production of Furnace.</p> <p>If Furnace does not produce on weekends, the savings analysis should be updated to reflect lower annual production.</p> <p>Currently, the savings estimate is based on the average daily production value that reflects the total production during the baseline period divided by the number of recorded production days (241) during the baseline period. This daily production value is then multiplied by 365 days to quantify the annual production. Similarly, the savings estimate reflects a similar ratio of 241 recorded production days and 365 presumed annual production days. While the furnace remains heated 24/7, the potential heat recovery is limited to the number of production days only. Please correct the savings analysis with an accurate baseline production value and baseline NG usage that reflects only production days, not a full year.</p>	Analysis assumptions		
2	<p>Out of the 241 days recorded for determining the baseline annual gas usage, five days show no reported gas usage even when there is reported production. If no credible gas usage data exists for these days, they should be excluded from the baseline analysis to avoid underreporting of baseline gas usage.</p>	Analysis assumptions		
3	<p>The savings analysis presumes that the batch/cullet material will be preheated to F. It is unclear how that value was derived or if a heat exchanger effectiveness was assumed in an energy and mass balance incorporating flue gas flow rate, entering and exit temperatures, the number of passes, and HX retention time. Figure 1b in the PFS shows that all of the diverted exhaust to the heat exchanger can be transferred to the batch &amp; cullet product; however, this is unrealistic when compared to typical heat recovery effectiveness.</p>	Calculation method		
4	<p>In the baseline scenario, flue gas is exhausted at 1,400 C (2,552 F). Once the plant installs the proposed HX, the flue gas exit temperature will drop. Based on the vintage and construction material of the exhaust stack, there may be limitations on how low this exit temperature can be reduced. Please revise the M&amp;V plan to address potential risks and mitigation strategies related to the reduced flue gas exit temperature. Additionally, the M&amp;V plan should include measurement of flue gas exit temperature to ensure that it falls within the allowable range in the post case.</p>	M&V plan		

Note or Instruction Number:	CPUC Staff Notes or Instructions:	Instruction Category	PA Response	ED Resolution
1	The project is classified as HVAC in the bimonthly upload data; the review team suggests Process as a more appropriate classification.	Other 1		
2	Per document "PRJ - 04197166 PRE EI Project Page - CONFIDENTIAL.pdf" (page 7 of 14) the raw material will be preheated to █ F. However, the savings analysis used the preheat temperature as █ F. Please confirm that the most up-to-date assumptions are reflected in the savings analysis and pre-installation claim.	Other 2		

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.</p> <p>The following areas will not be reviewed again by CPUC Staff:</p> <ul style="list-style-type: none"> <li>• Calculation Tool</li> <li>• Calculation Methodology</li> <li>• M&amp;V Plan</li> <li>• Baseline</li> <li>• Eligibility</li> <li>• EUL/RUL</li> <li>• Measure Type</li> <li>• Program Influence</li> </ul>
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.