

## CPUC Staff Ex Ante Review

CPUC Staff Project ID Number	PGE 23 T   915 PRJ - 04379078 Process
CPMA Directory Link	<a href="https://dberesources.info/cmpa/projects/21137">https://dberesources.info/cmpa/projects/21137</a>
PA	PGE
PA Application ID	PRJ - 04379078
PA Application Executed Date	
PA Program ID	PGE_Ind_002
PA Program Name	Business Energy Performance Ind - Customized Retrofit
PA Program Year	
Date of CPUC Staff Review:	3/5/2024
PA CMA Upload Dates Included in this review:	
First PA Upload	11/22/2023
Second PA Upload	1/2/2024
Third PA Upload	1/17/2024
Fourth PA Upload	
Fifth PA Upload	
Sixth PA Upload	
Seventh PA Upload	
Eighth PA Upload	
PA Measure Description(s):	
Measure 1	PROCESS RETROFITNEW-OTHER GAS-MODIFY PROCESS
Measure 2	
Measure 3	
Measure 4	
Measure 5	
Measure 6	
Measure 7	
Measure 8	
Measure 9	
Measure 10	
PA Project Description:	Install a mechanical vapor recompression system MVR at a ethanol production plant to recover energy within the distillation dehydration and evaporation system to significantly reduce natural gas usage within the facility
Bi-Monthly Upload kW Demand Reduction	-4,555.3
Bi-Monthly Upload Annual kWh Impacts	-38,264,675.1
Bi-Monthly Upload Therm Impacts	7,872,116.3
PA Proposed Incentive \$ (to Customer)	\$3,000,000.00
Project Documentation kW Demand Reduction	-4,555.0
Project Documentation Annual kWh Impacts	-38,264,675.0
Project Documentation Annual Therm Impacts	7,872,116.0
Project Documentation Incentive \$ (to Customer)	3,000,000.0
CPUC Staff Primary Reviewer Name	
CPUC Staff Primary Reviewer Firm	DNV
CPUC Staff Review Supervisor Name	
CPUC Staff Review Supervisor Firm	Quantum
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 (M&V Results and Final Calculations) Required

Action Number:	Summary of CPUC Staff Required Action by the PA:	Action Category	PA Response	ED Resolution	Due Date
1	Please resubmit this project for our review at the post-installation stage.	Continue Document Upload			

2	<p>Once the Process Flow Diagram (PFD) and Process Instrumentation Diagram (PID) are finalized, the PA must identify all equipment impacted by the measure. These diagrams need to be provided in the post-installation package and should accurately document the baseline (non-MVR) steady-state operation of the plant by detailing parameters like flow rate, temperature, pressure, and enthalpy. Additionally, they should map out both the currently in-place and future monitoring devices designed to track these parameters.</p> <p>The PA is required to prepare a detailed commissioning plan for both the baseline system and the new MVR system. This plan, along with the commissioning report, will be documented in the project package and provided after the system is installed. The commissioning plan must identify the key performance parameters—such as temperature, pressure, and flow rate—needed to define the baseline steady state operation. The commissioning report should then capture the actual readings of these parameters before the transition from the baseline system to the post-installation setup.</p> <p>The commissioning plan also needs to include any additional control instruments and monitoring protocols required. Since the baseline M&amp;V data will be collected after the new system's installation, implementing an isolation strategy is crucial to separate baseline and post-installation operations. The necessary equipment and instrumentation to isolate the MVR units must be installed, and the isolation process must be clearly detailed in the M&amp;V plan. The project package must include documentation that verifies the isolation process was followed throughout the M&amp;V phase.</p>	M&V plan		
3	<p>The M&amp;V plan must include measurements of process parameters for both the inlet and outlet fluids including the mass flow rate (in lb./hr. and gpm), temperature (in °F), pressure (in pig), percentage flow fraction, enthalpy (in Btu/hr.), plant feed rate, and ethanol production rate, among others. These parameters should be recorded hourly for all equipment impacted by the measure, as well as for other major equipment, to ensure that operations both before and after the project accurately reflect the plant's steady-state condition.</p> <p>The baseline M&amp;V phase should span at least four weeks after a baseline steady-state operation is reached. Additionally, the plan should include the natural gas consumption of all boilers and electric consumption of MVR units, all process pumps, boiler combustion fans, and cooling tower components (both fans and pumps), with data collected at hourly intervals for gas and every 15 minutes for electricity throughout both the baseline and post-project phases.</p> <p>The list of equipment affected by the MVR measure should, at minimum, should include E-4501, E-4502, E-4503, C-4101, C-4201, and C-4202. The plan should also incorporate the results of boiler combustion tests and the post-MVR process instrumentation diagram (PID). For monitoring, power loggers should be installed on all major electrical equipment currently lacking power monitoring capabilities.</p>	M&V plan		
4	<p>The final savings analysis must include the mass and energy balance calculations for each piece of DDE and MVR equipment. This should include detailed thermodynamic properties, like enthalpy, density, and specific heat for ethanol and water, considering the varying temperatures and pressures.</p> <p>For both the baseline and post-installation periods, all equipment impacted by the measure should be included in the mass and energy balance calculations. These calculations will reference the sources of process parameters as indicated in the PFD and PID, along with all inputs and assumptions made during the final savings estimation. The analysis for final savings should also take into account the latest boiler efficiencies based on the combustion test and normalize savings based on the production rate after the MVR installation.</p>	Calculation method		
5	<p>The customer for this project has recently acquired this facility. The facility, which had not been operational for some time, previously sourced natural gas from the wholesale market, with distribution by PG&amp;E, with PPP payments. The new owner intends to maintain this setup, and PG&amp;E has indicated that PPP payments will resume once production recommences. Given the plant's prolonged inactivity, there is no existing evidence of PPP payments by the new owner, aside from PG&amp;E's assurance of future payments under the same set up. Please include proof of PPP in the post-installation package.</p>	Eligibility		
6	<p>Please submit fuel substitution test for this project at the post-installation stage.</p>	Eligibility		
7	<p>According to PG&amp;E, the existing natural-gas-powered cogeneration system is currently non-operational, having been locked out and labeled as broken. PG&amp;E reports that the equipment is decommissioned in place, primarily due to the prohibitive costs associated with its removal. Furthermore, PGE indicated that there is no intention from the customer to repair this cogeneration system as it would lead to increased carbon intensity. The previous owner had contemplated integrating a heat recovery cogeneration component within the MVR project, but due to financial constraints, the new owner has decided against including this in the project scope. The post-installation documentation package should detail the process of decommissioning the existing system and provides substantiating evidence of its decommissioned status.</p>	CPUC Policy		

8	The post-installation package must contain a detailed cost analysis, along with supporting documentation. This analysis should include accurate calculations of the carbon intensity (CI) reduction credits, in addition to the revised equipment costs. The current cost analysis is based on preliminary assumptions of CI credits and the final manufacturer's quote was not made available for our review.	Measure cost		

Note or Instruction Number:	CPUC Staff Notes or Instructions:	Instruction Category	PA Response	ED Resolution

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.