

Phase I Ex Ante Review Findings

Table 1-1: Project Information

IOU	PG&E
Application ID	2K1315894C
Application Date	9/23/2013
Program ID	PGE21262
Program Name	University of California/California State University Partnership Program
Program Year	2013
Itron Project ID	X451
IOU Ex Ante Savings Date	11/27/2013
CPUC Staff Measure Name	Install laboratory HVAC system controls.
Project Description	Install laboratory HVAC system controls to reduce supply and exhaust air volume during occupied and unoccupied periods.
Date of CPUC Staff Review	12/14/2013
Primary Reviewer / Firm	Keith Rothenberg/Energy Metrics
Review Supervisor / Firm	Joseph Ball / Itron
CPUC Staff Project Manager	██████████ / California Public Utilities Commission, Energy Division
CPUC Staff Policy Authorization (as needed)	
Type of Review (Desk, On-site, Full M&V, Tool)	Desk
CPUC Staff Recommendation	The project is conditionally approved pending IOU resubmittal of savings calculations and post installation true-up of the ex ante savings estimate.

Measure Description

The project proposes to install laboratory HVAC system controls to reduce supply and exhaust air volume during occupied and unoccupied periods. During occupied periods, the level of contaminants in the exhaust air stream will be measured and used to control the supply and exhaust air volume. During unoccupied periods, the supply and exhaust air volume will be set to a pre-determined minimum.

Summary of Review

The Investor-Owned-Utility (IOU) submitted the following documents for this Phase I review:

- The project feasibility study prepared by the implementer.
- Email correspondence regarding the project pre-installation inspection.
- Design documents from the original design including equipment schedules and Title 24 Compliance documents.
- Calculation files and savings analysis.
- 20 months of natural gas usage history for the facility.
- The IOU review of the application.
- The IOU reviewer's check calculation of the implementer's analysis.

The IOU initially submitted calculation files and the project feasibility study on 11/8/2013. The calculation files provided to CPUC Staff were unreadable. The IOU resubmitted the calculation files on 11/14/13. The initial savings impacts were estimated to be 440,146 kWh, 77 kW peak demand reduction and 32,805 therms. CPUC staff noted that savings claim appeared to include electrical energy impacts. CPUC staff also noted that the customer likely purchased electrical energy from a Municipal utility. CPUC staff requested that the IOU clarify this issue and submit the IOU's review of the project. IOU submitted its review of the project on 11/27/13, acknowledging that the customer purchases electricity from a Municipal utility and removing electrical energy savings impacts. The revised savings impacts are 0 kWh, 0 kW peak demand reduction and 14,473 therms CPUC staff reviewed the submitted documentation and requested that the IOU clarify if the approved savings impacts include HVAC interactive effects- i.e. HVAC fan energy reduction would increase HVAC heating requirements during heating mode.

A phone call was held to discuss the project on 12/11/2013. The IOU has agreed to review the savings analysis and determine if the HVAC interactive effects have been properly accounted for and report back to CPUC staff making adjustments to the analysis as necessary. The IOU stated that the project is a fast track project, with the customer planning to implement the measures over the Christmas holiday break.

Review Conclusion

The ex ante savings are conditionally approved, pending IOU resubmittal of savings calculations and post installation true-up of the ex ante savings estimate...

Summary of CPUC Staff Requested Action by the IOU

CPUC Staff requests that the IOU undertake the recommended steps and submit the following information:

Due on 12/31/2013 (or 14 days from submittal date to IOU):

1. Provide an assessment of the IOU approved savings analysis and determine if the HVAC interactive effects have been properly accounted for. Report back to CPUC Staff making adjustments to the analysis as necessary.
2. Provide the EUL for the project.
3. Provide the live calculation spreadsheet with the sunset function removed.

Due after project completion:

1. Post installation inspection report.
2. Trued up savings analysis including measured data and analysis.
3. Copies of invoices to support the project cost estimates.

Table 1-2 Review Findings

Reviewed Parameter	Analysis
Project Baseline Type (Early Replacement, Normal Replacement, Capacity Expansion, New Construction, System Optimization, Add-on Measures, Major Renovation) Note: For early retirement projects only, include RUL through EUL baseline)	IOU Proposal: Retrofit add-on
	CPUC Staff Assessment: accept
	CPUC Staff Recommendation: none
Project Baseline Technology (in situ equipment, Title 24 (specify year), other code or other efficiency level (specify), industry standard practice - ISP)	IOU Proposal: in situ
	CPUC Staff Assessment: accept
	CPUC Staff Recommendation: none
Project Cost Basis (Full Incremental, or Both. Note: For early retirement projects, include RUL through EUL cost basis treatment)	IOU Proposal: Full cost
	CPUC Staff Assessment: accept
	CPUC Staff Recommendation: none
RUL (required for early retirement projects only, otherwise N/A)	IOU Proposal: N/A
	CPUC Staff Assessment: accept
	CPUC Staff Recommendation: none
EUL (for each measure)	IOU Proposal: Not stated
	CPUC Staff Assessment: IOU should provide the proposed EUL for the project
	CPUC Staff Recommendation: TBD
Savings Assumptions	IOU Proposal: Complex analysis using a custom spreadsheet created by the implementer.
	CPUC Staff Assessment: It is unclear if the analysis properly accounts for HVAC interactive effects.
	CPUC Staff Recommendation: CPUC Staff request that the IOU clarify if the

Reviewed Parameter	Analysis
	approved savings impacts include HVAC interactive effects- i.e. HVAC fan energy reduction would increase HVAC heating requirements during heating mode.
Calculation Methods/Tool review	IOU Proposal: Custom spreadsheet
	CPUC Staff Assessment: Complex spreadsheet not reviewed in depth. The spread sheet has a sunset function set to January 2015.
	CPUC Staff Recommendation: The sunset function in the spreadsheet should be removed. The IOU must maintain fully functional documents should they be required for future review of projects.
Pre- or Post-Installation M&V Plan	IOU Proposal: Measured data from the new control system will be used to true up the savings estimates after the completion of the project. Measurements will be performed for both the pre- project and post project operating conditions during normal periods of operation.
	CPUC Staff Assessment: Reasonable approach.
	CPUC Staff Recommendation: None
Net-to-Gross Review	IOU Proposal: Not addressed
	CPUC Staff Assessment: TBD
	CPUC Staff Recommendation: TBD

Table 1-3 Energy Savings Summary, Project Costs & Incentive

Description	IOU Ex Ante Claim	CPUC Staff Recommendations
First Year kWh Savings	0	0
First Year Peak kW Savings	0	0
First Year Therms Savings	14,473	TBD
kWh Savings (RUL Period)	NA	NA
Peak kW Savings (RUL Period)	NA	NA
Therms Impact (RUL Period)	NA	NA
kWh Savings (RUL thru EUL Period)	0	0
Peak kW Savings (RUL thru EUL Period)	0	0
Therms Savings (RUL thru EUL Period)	14,473	TBD
Annual Non-IOU Fuel Impact (RUL Period)	NA	NA
Annual Non-IOU Fuel Impact (RUL thru EUL Period)	440,146 kWh, 77 kW Non-IOU claimed, Municipal Utility savings impacts	TBD
Project Costs for Baseline #1 (RUL or EUL)	\$161,424	TBD
Project Costs for Baseline #2 (EUL minus RUL period)	NA	NA
Project Incentive Amount	\$14,473	TBD