

Final Ex Ante Review Findings

Table 1-1: Project Information

IOU	PG&E
Application ID	1433-01
Application Date	Not provided. The 3 rd party implementer should always submit their customer signed application as part of the ex ante review process.
Program ID	PGE2223
Program Name	Heavy Industry Energy Efficiency Program
Program Year	2013
Itron Project ID	X183
IOU Ex Ante Savings Date	8/16/12
Measure Name	Install new bladder tank
Project Description	Install vapor bladder tank to reduce vapor combustion unit cycling
Date of CPUC Staff Review	8/28/2012, 1/11/2013, 2/6/13, & 5/6/2014
Primary Reviewer / Firm	Keith Rothenberg/Energy Metrics
Review Supervisor / Firm	Joseph Ball/Itron
CPUC Staff Project Manager	
CPUC Staff Policy Authorization (as needed)	
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review & On-site
CPUC Staff Recommendation	The ex ante savings are approved at the IOU true-up values of 385,387 therms. Also, assign a NTGR of 0.82 for this project.

Measure Description

PG&E application 1433-01 documents the installation of a 110,000 ft³ vapor bladder tank to reduce vapor combustion unit (VCU) cycling. The facility stores crude and refined petroleum products. The product is received or exported by ships and pipelines. Several fixed roof tanks are used throughout the facility for storage. Vapor is collected from the tank farm and from the ship dock.

Two processes at the facility produce volatile organic compounds (VOCs). VOCs cannot be released directly to the atmosphere due to air quality regulations. The VOCs generated by the tank farm and from the loading of controlled product onto ships are burned in a vapor combustion unit (VCU). The vapor bladder tank stores VOCs from the tank farm that otherwise would have been required to be incinerated in the VCU. The VOCs generated at the ship dock are still combusted in the VCU and are not impacted by the project.

This project reduced the combustion of vapor from the tank farm by installing the vapor bladder tank which can store the tank vapor as the ambient air temperature increases. Vapor in the bladder tank returns to the tanks in the tank farm as the ambient air temperature decreases and vapor pressure decreases. When the vapor system reaches a defined set point, the VCU cycles on and burns the vapor to reduce vapor system pressure. According to the documentation, the VCU consumes natural gas during its startup phase to heat the combustor to 1,400 °F. The ship dock vapor collection system is not connected to the vapor bladder tank.

Commission staff notes that the submission of the completed IR package and energy savings true-up completely and effectively addressed all of Commission staff's concerns.

The application documents 385,387 annual therms savings with an incentive of \$385,387. The EUL for the measure is estimated to be 10 years.

Summary of Review

The implementer estimated the impacts of the project using a regression analysis. A linear regression model was constructed using three years of data to create a baseline for gas usage based on a number of variables that could affect total natural gas consumption. Following completion of the project, 12 months of data were collected and the regression model was used to predict what the gas usage would have been without the installation of the bladder. The difference in the predicted and actual natural gas usage provides an estimate of the natural gas savings resulting from the vapor bladder installation.

NTG SUMMARY: This was a brand new application for this customer of a technology they had not tried before. During the NTG interview, they indicated their existing equipment (Vapor Destruction Unit) was working fine, their primary project objective is energy savings.

During the NTG interview, the customer indicated strong program influence in their decision-making. In particular, the program incentive and their prior (positive) experiences participating

in the program were cited. Without the rebate, they would not have been considering this measure at all. The proposed rebate of \$738,715 represents about one-third of the total project cost of \$2 million.

The customer rated overall program importance an 8 out of 10 points, and absent the program, reported a 0 in 10 likelihood of installing the Bladder tank. Most likely, they would have retrofitted their existing equipment, specifically the burner, if the program and incentive were not available. NTGR calculated to be 0.82.

The Commission staff review concludes that the IOU documentation adequately addresses previous CPUC guidance for the project.

Review Conclusion

The ex ante savings are approved at 385,387 therms. Assign NTGR of 0.82 for this project.

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	385,387	385,387
kWh Savings (RUL Period)	0	0
Peak kW Savings (RUL Period)	0	0
Therms Impact (RUL Period)	0	0
kWh Savings (RUL thru EUL Period)	0	0
Peak kW Savings (RUL thru EUL Period)	0	0
Therms Savings (RUL thru EUL Period)	385,387	385,387
Annual Non-IOU Fuel Impact (RUL Period)	0	0
Annual Non-IOU Fuel Impact (RUL thru EUL Period)	0	0
Project Costs for Baseline #1 (RUL or EUL)	\$2,573,802	\$2,573,802
Project Costs for Baseline #2 (EUL minus RUL period)	\$2,573,802	\$2,573,802
Project Incentive Amount	\$385,387	\$385,387