

Phase II Final Ex Ante Review Findings

Table 1-1: Project Information

IOU	PG&E
Application ID	2K12123477
Application Date	10/8/2012
Program ID	PGE21021
Program Name	NRR-Core (OBF)
Program Year	2012
Itron Project ID	X230
IOU Ex Ante Savings Date	TBD
ED Measure Name	Exterior LED Lighting Retrofit
Project Description	Outdoor lighting retrofit of MH gas station canopy fixtures and surrounding parking lot fixtures with LED fixtures
Date of ED Review(s)	11/30/2012 (conditional), 5/03/2013 (final)
Primary Reviewer and Firm	Charles Ehrlich/Itron
Review Supervisor and Firm	Joseph Ball/Itron
Review Type (Desk, On-site, Full M&V, Tool)	Desk
ED Recommendation	Ex ante savings approved at the post-installation (IR) amount 36,314.0 kWh and zero (0) kW peak demand reduction.
ED Project Manager	[REDACTED]
ED Policy Authorization	

Measure Description

The project is a retrofit of outdoor lighting at a gas station canopy and other surrounding parking lot fixtures.

Summary of Review

The documents reviewed during the pre-installation phase for this project include:

- 2K12123477 App Package.pdf
- 2K12123477 [REDACTED] PA Package_OBF.pdf
- 2K12123477 PG&E Report.pdf
- 2K12123477 [REDACTED] OBF Loan Agrmt TIF 1670.pdf
- 2K12123477-COM Approved Calculations.pdf
- 2K12123477-COM Approved Calculations.xlsx
- 2K12123477-COM Approved OBF Loan Calculation.xlsx
- 2K12123477-COM LED Specifications and DLC QPL Listing.pdf
- 2K12123477-COM Usage History.pdf
- 2K12123477-COM_2012 PG&E Review Form v1.2_OBF.xls

Additional documents reviewed after completion of the project include:

- 2K12123477-COM AESC IR Calculations.xlsx
- 2K12123477-COM Invoice.pdf
- 2K12123477-COM_2012 PG&E Review Form v1.2_OBF.xls
- EnergyEfficiencyOIR-Post-2008_DR_ED_305_EEGA_2539.doc
- (OBF) 2K12123477-COM [REDACTED] IR Approved.msg
- LM-70 CAN-227-SL-RM ledrecessedcanopylightslrm0912.pdf (manufacturer website)

There were twenty (20) canopy fixtures and nine (9) pole-mounted fixtures in the surrounding hardscape area of which all of the canopy fixtures and four (4) of the pole-mounted fixtures were replaced. Although the reviewer finds minor discrepancies in how the Title 24 Lighting Zones baseline was calculated by the IOU, ED approves the IOU proposed use of the pre-existing light fixtures as the baseline for energy savings for both the RUL and EUL-RUL time periods. The savings calculations were adjusted by the IOU reviewer/auditor based upon a reduction in the actual number of hardscape area fixtures replaced and one fixture with different installed wattage. ED approves the re-calculated savings at 36,314.0 kWh.

Even though more than 50% of the fixtures in the canopy area are being replaced thus triggering the “lighting zones” requirements of T-24 Section 147, the pre-existing fixtures are more energy efficient than the code specifies, and are therefore the appropriate baseline. For the surrounding parking lot, the percentage of fixtures replaced appears to be less than 50%, but mandatory lighting requirements such as cutoff angle still applies. However, the manufacturer documentation indicates that these fixtures quality as “cutoff” fixtures.

ED accepts the IOU estimate of remaining useful life of the metal halide fixtures based upon the statement that the pre-existing fixtures were in good working order. Since the baseline for the

RUL and EUL-RUL time periods are the same, the determination of the RUL does not affect lifetime savings calculations. The manufacturer’s LM-70 documentation confirms the IOU estimate for Effective Useful Life of 16.5 years, but the EUL is capped at 15 years per DEER guidelines.

Review Conclusion

ED approves energy savings of 36,314.0 kWh and zero demand reduction.

The following table summarizes the current status of the Early Application Review.

Table 1-2: Project Overview

Description	IOU Proposed Ex Ante Data	ED Recommendations
Project Baseline Type (Early Replacement, Normal Replacement, Capacity Expansion, New Construction, System Optimization, Add-on Measures)	Early Retirement	Early Retirement
Project Cost Basis (Full Cost, Incremental Cost)	Full Cost implied	For Early Retirement, both full and incremental costs apply (dual baseline).
RUL (Early retirement projects only, otherwise N/A (not applicable))	Not provided	4.8 years
EUL	Not provided	15 years
First Year kWh Savings	42,677	36,314.0
First Year Peak kW Savings	0	0
First Year Therms Savings	N/A	N/A
kWh Savings (RUL Period)	42,677	36,314.0
Peak kW Savings (RUL Period)	0	0
Therms Impact (RUL Period)	N/A	N/A
kWh Savings (EUL thru RUL Period)	42,677	36,314.0
Peak kW Savings (EUL thru RUL	0	0

Description	IOU Proposed Ex Ante Data	ED Recommendations
Period)		
Therms Savings (EUL thru RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (EUL thru RUL Period)	N/A	N/A
Net-to-Gross Ratio	Not provided	Assessment not required

Table 1-3: Detailed Review Findings

Reviewed Parameter	Analysis
Project Gross Savings Baseline (for early retirement projects only, include RUL through EUL baseline)	IOU Proposal: Early Replacement using in situ fixture wattage. The savings during the RUL period is the same as the EUL-RUL period because the pre-existing fixtures are more efficient than the minimally-compliant lighting system per T-24.
	ED Assessment: The pre-existing fixtures are the appropriate baseline for both the RUL and EUL-RUL time periods.
	ED Recommendation: None
Project Cost Basis (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: Full cost
	ED Assessment: Full Cost
	ED recommendation: None
RUL (required for early retirement projects only, otherwise n/a)	IOU Proposal: 5 years
	ED Assessment: 4.8 years
	ED recommendation: None
EUL	IOU Proposal: 16.5 years
	ED Assessment: 15 years
	ED Recommendation: None

Reviewed Parameter	Analysis
Savings Assumptions	IOU Proposal: In situ fixtures are the baseline for RUL and EUL-RUL time periods
	ED Assessment: Approved
	ED Recommendation: None
Calculation Methods/Tool review	IOU Proposal: Calculation via spreadsheet
	ED Assessment: Final IR-approved calculations are acceptable.
	ED Recommendation: None
Pre- or Post-Installation M&V Plan	IOU Proposal: Pre-installation site visit verification performed
	ED Assessment: None required.
	ED Recommendation: None
Net-to-Gross Review	IOU Proposal: Not provided
	ED Assessment: Not assessed
	ED Recommendation: None required