

Phase I Ex Ante Review Findings

Table Error! No text of specified style in document.-1: Project Information

IOU	Pacific Gas & Electric (PG&E)
Application ID	EACG0007
Application Date	TBD
Program ID	PGE22005
Program Name	Casino Green
Program Year	2013
Itron Project ID	X448
IOU Ex Ante Savings Date	November 13, 2013
CPUC Staff Measure Name	LED fixtures
Project Description	Exterior lighting retrofit for a casino
Date of CPUC Staff Review	12/26/13
Primary Reviewer / Firm	Sepideh Shahinfard / Itron
Review Supervisor / Firm	Leonel Campoy / 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 revisions to the ex ante savings baseline for the 1,000 Watt HPS sodium fixtures to lumen equivalent PSMH fixtures to comply with prior directives given to the IOUs in the Commission Staff's Lighting Disposition.

Measure Description

The project will replace the exterior High Pressure Sodium (HPS) and Metal Halide (MH) fixtures with LED Fixtures at a casino.

Summary of Review

PG&E, the Investor-Owned-Utility (IOU), submitted the following documents to fulfill the CPUC staff for Data Request (DR) on November 13, 2013 for this Phase I review:

- Energy Savings Report;
- Contractor Work Order Agreement;
- Savings Calculation Workbooks;
- Proposed Lighting Specification Sheets;
- Response to CPUC Staff Data Request Email;
- PGECOLTG158 Exterior Induction Fixtures and PGECOLTG151LED Outdoor Street and Area Lighting Work Papers; and the
- Commission Staff 2013-2014 Lighting Retrofit Disposition.

PG&E did not provide a copy of the customer's signed application form. The CPUC staff identified one main issue. PG&E indicates that replacing the existing HPS and MH fixtures with LED fixtures are Replacement on Burnout (ROB) measures. Since the fixtures are operational, CPUC Staff considers them as Normal Replacements (NR) and code or DEER baseline should be used to calculate the savings. PG&E used the in-situ fixtures for retrofitting 1000 Watt High Pressure Sodium fixtures with LED fixtures claiming that PGECOLTG158 work paper shows HPS code baseline equal to HPS existing base wattage. As stated in prior CPUC staff data request email, per the Commission Staff 2013-2014 Lighting Retrofit Disposition, the code baseline for exterior lighting applications such as those proposed in this project should be pulse start metal halide (PSMH) technology. Therefore, the baseline for these fixtures should be revised to a lumen equivalent PSMH fixture. PG&E did use a PSMH baseline for the MH fixture replacements.

CPUC staff found a discrepancy regarding the proposed 70 Watt Maxlite MLAR70LED50 LED fixture. CPUC staff observes that this fixture is listed in the Statewide Table of Pre-Qualified LED Fixtures as a 60.8 Watt fixture. CPUC staff requests that PG&E explain and resolve the discrepancy.

Review Conclusion

The project is conditionally approved pending revisions to the ex ante savings baseline for the 1,000 Watt HPS sodium fixtures to lumen equivalent PSMH fixtures to comply with prior directives given to the IOUs in the Commission Staff's Lighting Disposition.

Summary of CPUC Staff Requested Action by the IOU

CPUC Staff requests that PG&E undertake the recommended actions and submit the following information by January 20, 2014 or 14 days after the submittal date of this review:

1. Revise the baseline for the HPS fixtures to lumen equivalent PSMH fixtures and resubmit the ex ante savings;
2. Provide the signed customer agreement forms and proposed incentive estimates;
3. Explain how the incremental measure costs were taken into account in the proposed incentive amounts;
4. Upon project completion, submit itemized contractor invoices to support the full and incremental measure costs; and
5. Upon project completion, submit the post-installation verification report, any measurement data taken, final incentive amounts, and trued-up final savings estimates to the as-built and verified conditions.

Table 1-2 Review Findings

Reviewed Parameter	Analysis
<p>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)</p>	IOU Proposal: Replace-On-Burnout (ROB)
	CPUC Staff Assessment: Normal Replacement
	CPUC Staff Recommendation: Since the fixtures are operational, CPUC Staff considers them as Normal Replacements.
<p>Project Baseline Technology (in situ equipment, Title 24 (specify year), other code or other efficiency level (specify), industry standard practice - ISP)</p>	IOU Proposal: In situ equipment
	CPUC Staff Assessment: Code or DEER baseline
	CPUC Staff Recommendation: The baseline for 1000 watt HPS fixtures should be revised to lumen equivalent PSMH fixture
<p>Project Cost Basis (Full Incremental, or Both. Note: For early retirement projects, include RUL through EUL cost basis treatment)</p>	IOU Proposal: Incremental measure cost
	CPUC Staff Assessment: Incremental measure cost
	CPUC Staff Recommendation: By project completion, submit the post-installation verification report and any measurement data taken, along with tried-up final savings estimates.
<p>RUL (required for early retirement projects only, otherwise N/A)</p>	IOU Proposal: N/A
	CPUC Staff Assessment: N/A
	CPUC Staff Recommendation: N/A
<p>EUL (for each measure)</p>	IOU Proposal: 12.2 years based on 50,000 hours of Rated Life /4100
	CPUC Staff Assessment: The service life should be 20,000 hours.
	CPUC Staff Recommendation: 4.8 years
<p>Savings Assumptions</p>	IOU Proposal: The code baseline used for MH fixture replacements. In situ equipment used for replacing HPS fixtures. The proposed LED fixtures were found in Table of Pre-Qualified LED Fixtures but the wattage used to calculate the savings is different than wattage listed for the same product in Table of Pre-Qualified LED Fixtures.
	CPUC Staff Assessment: The baseline for HPS fixtures should be revised to

Reviewed Parameter	Analysis
	<p>lumen equivalent PSMH fixture.</p> <p>CPUC Staff Recommendation: For the final savings claim, correct the second baseline for the HPS fixtures the wattage of the proposed LED fixture.</p>
<p>Calculation Methods/Tool review</p>	<p>IOU Proposal: Savings calculated using an engineering spreadsheet.</p> <p>CPUC Staff Assessment: Calculation method is acceptable.</p> <p>CPUC Staff Recommendation: None</p>
<p>Pre- or Post-Installation M&V Plan</p>	<p>IOU Proposal: Not Provided</p> <p>CPUC Staff Assessment: The data post-installation verification survey should record and report the actual lamp models installed and fixture counts as well as any lighting control additions in the as-built condition.</p> <p>CPUC Staff Recommendation: Use the collected post-installation verification data and any measurement data to true-up the final impact estimates. Submit the verification data and report for the final ED review.</p>
<p>Net-to-Gross Review</p>	<p>IOU Proposal: Not Provided</p> <p>CPUC Staff Assessment: An NTG assessment is not warranted at this stage.</p> <p>CPUC Staff Recommendation: An NTG interview is not recommended at this stage.</p>

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

Description	IOU Ex Ante Claim	CPUC Staff Recommendations
First Year kWh Savings	506,108	TBD
First Year Peak kW Savings	0	0
First Year Therms Savings	0	0
kWh Savings (RUL Period)	N/A	N/A
Peak kW Savings (RUL Period)	N/A	N/A
Therms Impact (RUL Period)	N/A	N/A
kWh Savings (RUL thru EUL Period)	N/A	N/A
Peak kW Savings (RUL thru EUL Period)	N/A	N/A
Therms Savings (RUL thru EUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL thru EUL Period)	N/A	N/A
Project Costs for Baseline #1 (RUL or EUL)	Full Project Cost \$225,341 Incremental Project Cost \$167,441	Incremental Measure Costs TBD
Project Costs for Baseline #2 (EUL minus RUL period)	N/A	N/A
Project Incentive Amount	\$70,855	TBD