

## **Phase I Ex Ante Review Findings**

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

<b>IOU</b>	PG&E
<b>Application ID</b>	EFM-101
<b>Application Date</b>	TBD
<b>Program ID</b>	PGE2199
<b>Program Name</b>	Energy-Efficient Parking Garage
<b>Program Year</b>	2013
<b>Itron Project ID</b>	X310
<b>IOU Ex Ante Savings Date</b>	TBD
<b>ED Measure Name</b>	Parking Garage Lighting Retrofit
<b>Project Description</b>	Replace manually controlled metal halide fixtures with T8 fixtures
<b>Date of ED Review(s)</b>	04/02/13
<b>Primary Reviewer and Firm</b>	Sepideh Shahinfard/ Itron
<b>Review Supervisor and Firm</b>	Joseph Ball/ Itron
<b>Type of Review (Desk, On-site, Full M&amp;V, Tool)</b>	Desk Review
<b>ED Recommendation</b>	ED conditionally approves the ex ante savings estimates pending the post-installation M&V and savings true-up.

## **Measure Description**

The project involves replacing the existing 34 manually controlled 175 watt metal halide fixtures with 34 two (2) lamp, 32 watt T8 fixtures in two parking garages. The operating hours of the 27 of the fixtures are 8,760 hours per year, however the perimeter fixtures (total of 7 fixtures) are equipped with photocell control, which are estimated to operate 4380 hours annually.

## **Summary of Review**

The Investor Owned Utility (IOU) submitted the following documents for review:

- Project description “TPS\_Report\_XXXXXX\_v4\_smz”
- Energy saving calculations “Energy\_Savings\_XXXXXX\_1\_R1” and “Energy\_Savings\_Nazent\_2\_R2”
- Proposed fixture catalog “Digital Lumens Manufacturers Spec Sheet”

The Energy Division (ED) Phase I review focused on the information provided by the IOU and verifying that the appropriate baseline was used for this project. ED’s review found that the PG&E early retirement claim and using existing fixtures as the baseline was acceptable. The lighting power density Values (Watts/ft<sup>2</sup>) of these parking garages with pre-existing fixtures are 0.182 and 0.145. The proposed lighting power density values are 0.06 Watts/ft<sup>2</sup> and 0.05 Watts/ft<sup>2</sup> accordingly. The 2008 Title 24 allowed lighting power density (LPD) for parking garage buildings is 0.3 Watts/ft<sup>2</sup>. The 2014 Title 24 allowed lighting power density for parking garage buildings is 0.2 Watts/ft<sup>2</sup>. Therefore, in order to have non-regressive baseline, the second baseline calculation should be done using the pre-existing equipment. In that respect, the ED reviewers estimated a weighted average remaining useful life (RUL) of 2.5 years for both parking garages using the 2011 DEER update report (Section 4, page 20) method based on one-third of the measure EUL.

PG&E is required to use the 2013 Table of Standard Fixture Wattages and Sample Lighting Table, Appendix B, for proposed fixtures.

ED conditionally approves the ex ante savings estimates pending the post-installation M&V and savings true-up, along with the requested follow-up information and documentation to allow ED to assess the final energy saving.

## **Summary of ED Requested Action by the IOU**

ED requests the following actions and supporting documentation to allow ED to complete the ex ante review:

- Provide photographs of the existing equipment including the lamp (showing wattage) fixture housings, and manufacturer nameplate data.

- Provide floor plan showing all lighting fixtures, fixture mounting height, and floor area.
- Update savings calculation spreadsheet with correct proposed lighting wattages after the post-install, two week monitoring period and the IOU installation report has been completed and submitted to ED.
- Provide both the full and incremental measure costs.
- Submit the signed project application.

**Table 1-2: Project Overview**

<b>Description</b>	<b>IOU Proposed Ex Ante Data</b>	<b>ED Recommendations</b>
<b>Project Baseline Type (Early Replacement, Normal Replacement, Capacity Expansion, New Construction, System Optimization, Add-on Measures)</b>	Early replacement with non-regressive baseline	Early replacement with non-regressive baseline
<b>Project Cost Basis (Full Cost, Incremental Cost)</b>	Not provided	Both full & incremental cost will apply for this dual baseline project
<b>RUL (Early retirement projects only, otherwise N/A (not applicable))</b>	More than a year	2.5 year
<b>EUL</b>	Not provided	TBD
<b>First Year kWh Savings</b>	44,264.28	TBD
<b>First Year Peak kW Savings</b>	4.23	TBD
<b>First Year Therms Savings</b>	N/A	N/A
<b>kWh Savings (RUL Period)</b>	44,264.28	TBD
<b>Peak kW Savings (RUL Period)</b>	4.23	TBD
<b>Therms Impact (RUL Period)</b>	N/A	TBD
<b>kWh Savings (EUL thru RUL Period)</b>	44,264.28	TBD
<b>Peak kW Savings (EUL thru RUL Period)</b>	4.23	TBD
<b>Therms Savings (EUL thru RUL Period)</b>	N/A	TBD
<b>Annual Non-IOU Fuel Impact (RUL Period)</b>	N/A	N/A
<b>Annual Non-IOU Fuel Impact (EUL thru RUL Period)</b>	N/A	N/A
<b>Net-to-Gross Ratio</b>	Not available	Not assessed

**Table 1-3: Detailed Review Findings**

<b>Reviewed Parameter</b>	<b>Analysis</b>
<b>Project Gross Savings Baseline</b> (for early retirement projects only, include RUL through EUL baseline)	IOU Proposal: Early replacement of existing fixtures used as the baseline
	ED Assessment: Acceptable
	ED Recommendation: None
<b>Project Cost Basis</b> (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: Not provided
	ED Assessment: Not completed pending submission of more information.
	ED Recommendation: After the post-install inspection report (IR) provide full and incremental project and measure costs supported with itemized contractor invoices
<b>RUL</b> (required for early retirement projects only, otherwise n/a)	IOU Proposal: Greater than one year
	ED Assessment: 2.5 years per ED calculations based on the DEER RUL estimation approach
	ED Recommendation: Use 2.5 years or provide the RUL of the existing fixtures
<b>EUL</b>	IOU Proposal: Not Provided
	ED Assessment: 15 years based on DEER 2008 EUL summary table
	ED Recommendation: Use 15 years or provide the EUL of the new T8 fixtures
<b>Savings Assumptions</b>	IOU Proposal: The savings calculation spreadsheet used existing fixtures as the baseline. The operating hours are 8,760 hrs/yr for all of fixtures except the perimeter fixtures that are equipped with photocell control
	ED Assessment: The saving assumptions are acceptable
	ED Recommendation: Revise savings calculations based on the Table of standard wattages for the proposed fixtures
<b>Calculation Methods/Tool review</b>	IOU Proposal: Savings were calculated using an excel spreadsheet.
	ED Assessment: Calculation method is acceptable
	ED Recommendation: The spreadsheet approach is acceptable but the savings calculation spreadsheet needs to be revised based on the Table of standard wattages for the proposed fixtures
<b>Pre- or Post-Installation M&amp;V Plan</b>	IOU Proposal: Not provided
	ED Assessment: Not assessed
	ED Recommendation: Provide an M&V plan that highlights the accuracy of the built-in measurement devices
<b>Net-to-Gross Review</b>	IOU Proposal: Not provided

*Ex Ante Review Findings*

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<b>Reviewed Parameter</b>	<b>Analysis</b>
	ED Assessment: Assessment not completed
	ED Recommendation: Not recommended