

## Phase I Ex Ante Review Findings

**Table 1-1: Project Information**

<b>IOU</b>	PG&E
<b>Application ID</b>	NC0123726
<b>Application Date</b>	06/2012
<b>Program ID</b>	TBD
<b>Program Name</b>	Non Residential New Construction Program
<b>Program Year</b>	2013
<b>Itron Project ID</b>	X312
<b>IOU Ex Ante Savings Date</b>	TBD
<b>ED Measure Name</b>	Heat Recovery Project
<b>Project Description</b>	The project intends to achieve heat recovery by installing three measures. Dryer exhaust air recirculation, waste water heat recovery, and flue gas stack recovery economizer.
<b>Date of ED Review(s)</b>	07/19/2013
<b>Primary Reviewer and Firm</b>	Kunal Desai/ERS
<b>Review Supervisor and Firm</b>	Joseph Ball /Itron
<b>ED Project Manager</b>	██████████ / California Public Utilities Commission, Energy Division
<b>ED Policy Authorization</b>	
<b>Type of Review (Desk, On-site, Full M&amp;V, Tool)</b>	Desk
<b>ED Recommendation</b>	EEM 1 & EEM2 for this project are conditionally approved, pending review of post-installation M&V data and savings true-up. EEM 3 is not approved due to the measure baseline being an ISP for new construction projects in the food processing sector.

## **Measure Description**

This project intends to achieve heat recovery by installation of the following three (3) measures.

EEM 1 - Stack Economizers on the dryers – The energy efficiency for this process entails the addition to the boiler stack of an economizer to preheat the boiler make up water.

EEM 2 - Heat recovery from recycled water – This entails reuse of waste water that after being strained. It is assumed that 13.5 gpm of water at 190F and that the three water cyclones could recover 90 gpm each at 160F.

EEM 3 - Dryer exhaust air recirculation – Per the design, there will be 5 new dryers at the plant with the purpose of drying the product and removing moisture before packaging. Recirculation of the exhaust gases will reduce the amount of energy needed to heat incoming air and therefore less gas is needed to achieve the same drying result.

## **Summary of Review**

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

- Live energy savings calculation spreadsheet,
- Process diagram,
- ED EEGA Data Request 2735 Document, and
- Energy Savings Report.

This is a new construction project. IOU submitted the initial energy savings report prepared by a third party contractor. However, the measure descriptions were not detailed completely. ED had to call PGE's engineer and project manager multiple times to get detailed process and project information. IOU did submit a live energy calculation spreadsheet but the spreadsheet inputs are not supported by supporting documentation. Equipment cutsheet for the new equipment were also not provided for ED review.

The energy savings report and calculation spreadsheet has multiple assumptions which have to be verified in the post installation M&V phase. It is unclear to ED as to which points will be recorded on the SCADA system and which ones will require stand alone monitoring. ED suggests that post installation M&V plan be submitted listing the intended M&V time period. ED recommends that atleast one month of post installation M&V be conducted to verify the energy savings. EEM 3, the dryer exhaust air recirculation is typically an Industry Standard Practice (ISP) for new construction projects in food processing facilities. No additional supporting documentation has been provided to support the non ISP claim.

The gas savings expected from the stack economizer, water recovery, and dryer exhaust air recirculation measures are 26,000, 1,281,000, & 1,194,000 therms respectively. The total project

incremental cost for all the three measures is expected to be \$653,000. The estimated incentive for the project is \$326,000.

### **Review Conclusion**

EEM 1 & EEM2 for this project are conditionally approved, pending review of post-installation M&V data and savings true-up. EEM 3 is not approved due to the measure baseline being an ISP for new construction projects in the food processing sector.

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

ED requests that the IOU undertake the recommended steps and submit the following information due on *8/12/2013* (or 14 days from submittal date to IOU):

- Post Installation M&V Plan
- Equipment cutsheets for Boilers, Dryers (Primary, Secondary & Natural) and stack economizer.
- Process diagram of the economizer
- Provide supporting documentation to show that EEM 3 is not an Industry Standard Practice for new construction projects in food processing facilities.

ED requests that the IOU undertake the recommended steps and submit the following information when the project is complete:

- The post-installation M&V data and trued-up savings estimates
- Detailed project invoices
- Monthly Production Data

**Table 1-1: 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)	New Construction	New Construction
Project Cost Basis (Full Cost, Incremental Cost)	Incremental cost : \$653,000	Incremental cost basis is appropriate for new construction projects.
RUL (Early retirement projects only, otherwise N/A (not applicable))	Not provided	N/A
EUL	Not provided	TBD
First Year kWh Savings	N/A	N/A
First Year Peak kW Savings	N/A	N/A
First Year Therms Savings	2,501,000	TBD
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 (EUL thru RUL Period)	N/A	N/A
Peak kW Savings (EUL thru RUL Period)	N/A	N/A
Therms Savings (EUL thru RUL Period)	2,501,000	TBD
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	TBD

**Table 1-2: Detailed Review Findings**

Reviewed Parameter	Analysis
<b>Project Gross Savings Baseline</b> (for early retirement projects only, include RUL through EUL baseline)	IOU Proposal: New Construction
	ED Assessment: New Construction
	ED Recommendation: Acceptable
<b>Project Cost Basis</b> (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: Incremental cost provided.
	ED Assessment: Incremental cost basis is acceptable.
	ED recommendation: ED requests that the IOU provide detailed, itemized invoices and any other pertinent supporting documentation used to verify the project’s actual measure cost estimates upon project completion.
<b>RUL</b> (required for early retirement projects only, otherwise n/a)	IOU Proposal: N/A
	ED Assessment: N/A
	ED recommendation: N/A
<b>EUL</b>	IOU Proposal: Not provided
	ED Assessment: Not accessed
	ED Recommendation: Use the EUL from the DEER database
<b>Savings Assumptions</b>	IOU Proposal: IOU estimates that the dryer exhaust air recirculation will be at 90% rate in the post conditions. The operating hours of the facility was assumed to be 8,400 per year. Delta T of 130F and 100F was assumed for the waste water heat recovery measure.
	ED Assessment: The assumption listed above has not been provided with supporting documentation. Equipment cutsheet have not been submitted for ED review. ED was not able to verify the ex ante savings estimates.
	ED Recommendation: ED recommends that assumptions should be verified and updated using SCADA data or metered data.
<b>Calculation Methods/Tool</b>	IOU Proposal: Calculations were performed in excel spreadsheet based on the equations and assumptions noted in the implementation plan.

<b>Reviewed Parameter</b>	<b>Analysis</b>
<b>review</b>	ED Assessment: ED agrees with the calculation methodology.
	ED Recommendation: None
<b>Pre- or Post-Installation M&amp;V Plan</b>	IOU Proposal: M&V plan is not provided with the documentation.
	ED Assessment: Not accessed
	ED Recommendation: Submit M&V plan for ED review
<b>Net-to-Gross Review</b>	IOU Proposal: Not provided
	ED Assessment: Not accessed
	ED Recommendation: A NTG interview may be warranted