

Ex Ante Prospective Review Findings

Table 1-1: Project Information

IOU	PGE
Application ID	2K13165943
Application Date	TBD
Program ID	PGE21021
Program Name	Industrial Calculated Incentives
Program Year	2012
Itron Project ID	X231
IOU Ex Ante Savings Date	TBD
ED Measure Name	Baghouse Blowers
Project Description	Install inlet guide vanes to modulate airflow on ten (10) baghouse blower fans
Date of ED Review(s)	05/20/2013
Primary Reviewer and Firm	Kunal Desai/Itron
Review Supervisor and Firm	Joseph Ball/Itron
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review
ED Project Manager	[REDACTED]
ED Policy Authorization (as needed)	
ED Recommendation	ED's prospective review for similar projects moving forward. Please note this project's low NTG value and the associated ED analysis.

Measure Description

Baghouses use airflow and filter bags to collect dust. When bags are clean, the pressure drop across the bag is low, which translates to a lower total pressure on the blower. At lower pressures, the blower moves more air than is necessary to maintain suspension in the dust collection ductwork. This measure proposes to install inlet guide vanes on 10 baghouse blowers at multiple site locations, allowing the motor speed to match the magnahelic reading and maintaining the critical velocity necessary to keep particles in suspension without moving more air than is required.

Preliminary estimates of kWh & kW savings are 377,493 kWh & 47.66 respectively. The estimated incentive for this project is \$38,740. The range for estimated project cost is between \$42,067. It is likely that the project will be capped at 50% of capital cost.

Comment [FR1]: What's the cost range? Says it is "between \$42067." What's the other value?

Summary of Review

ED reviewed the following IOU provided documentation: Updated baghouse fan project summary, energy audit report, data request response document, Schematic process diagram, live energy savings calculation spreadsheet, Email Correspondence and EEGA request document.

The energy audit report showed that the owner had three options to save fan energy. The latest data request response provided by PGE clarifies that the owner has chosen the guide vane option for installation. Upon installation the inlet guide vane position will be adjusted to maintain a fixed pressure on the "dirty" side of the baghouse in order to maintain a fixed airflow rate as pressure drop across the baghouse increases. IOU took multiple spot measurements for air CFM and pressure. These measurements were captured when the baghouse filters were in the clean and dirty state. IOU proposes that with guide vane installation, the system can operate efficiently with reduced CFM. To estimate energy savings, CFM reading captured during the filter dirty state were used. The facility does not have a SCADA system that monitors the baghouse airflows or system pressures. Manual pitot tube readings were obtained by IOU to estimate energy savings. IOU proposed EUL for this measure is 10 years.

ED agrees with the IOU add-on measure baseline claim and determines their baseline calculation methodology to be conservative and acceptable. No justification was provided for the annual operating hours of 7920 for all ten fans.

Review Conclusion

ED would require that moving forward, similar projects would need post-install M&V and IOU true up. Please also note the low NTG for this project, and the associated ED NTG analysis.

Summary of ED Requested Action by the IOU

ED recommends that the IOU perform the following actions for similar projects moving forward. Line item 1 (in red font) is due prior to project implementation. Items 2 and 3 (in blue font) are required after post-install M&V and IOU true-up has been performed:

1. Provide post installation M&V plan to 1) include amperage, pressure and flow readings be recorded via data logging for a period of two weeks, 2) take spot measurements of voltage and power factor, and 3) justification of the 7920 annual operating hours, including operating schedules and any regular maintenance intervals and downtimes.
2. Provide the PA application, the IR report, post-install logger files, and any revised, “live” spreadsheet calculations.
3. Provide production data at this facility for the last five years, normalize the production data using one full of year of pre-production data, and monitor the production levels during the two-week post-install M&V period to adjust energy savings.

Comment [FR2]: Why 5 years? Seems onerous and how does past production in any way predict future? How will you use this data?

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)	Add on Measure	Add on Measure acceptable
Project Cost Basis (Full Cost, Incremental Cost)	Full cost	Full cost acceptable
RUL (Early retirement projects only, otherwise N/A (not applicable))	N/A	N/A
EUL	10 years	10 years
First Year kWh Savings	377,493	TBD;
First Year Peak kW Savings	47.66	TBD;
First Year Therms Savings	N/A	N/A
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)	377,493	TBD
Peak kW Savings (EUL thru RUL Period)	47.66	TBD
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

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Description	IOU Proposed Ex Ante Data	ED Recommendations
Net-to-Gross Ratio	Not provided	0.51

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: Add on Measure
	ED Assessment: Add on Measure acceptable
	ED Recommendation: None
Project Cost Basis (for early retirement projects only, include RUL through EUL cost basis treatment)	IOU Proposal: Full Cost provided
	ED Assessment: Full cost acceptable for Add-on Measure
	ED recommendation: None
RUL (required for early retirement projects only, otherwise n/a)	IOU Proposal: N/A
	ED Assessment: N/A
	ED recommendation: N/A
EUL	IOU Proposal: 10 years
	ED Assessment: 10 years acceptable
	ED Recommendation: None
Savings Assumptions	IOU Proposal: It is assumed that the facility will be able to reduce the blower CFM & pressure in the post condition. To estimate energy savings blower CFM & pressure recorded at dirty filter level is used as a placeholder. Annual operating hours of all ten blowers are 7920 hrs/yr.
	ED Assessment: The assumptions for system pressures and CFMs need to be verified during the post M&V phase.
	ED Recommendation: Facility operating hours need to be verified in the post M&V phase
Calculation	IOU Proposal: Live energy savings custom calculation spreadsheet was

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Reviewed Parameter	Analysis
Methods/Tool review	submitted for ED review.
	ED Assessment: Calculation methodology acceptable; however, estimates should be normalized using 1 year of pre-install production data and production data over the two-week post-install M&V period.
	ED Recommendation: Normalize for production, pre- to post-install.
Pre- or Post-Installation M&V Plan	IOU Proposal: Amperage, pressure, and flow spot readings to be taken before and after installation to evaluate realized energy savings.
	ED Assessment: Post installation M&V time period is not specified.
	ED Recommendation: ED recommends that amperage, pressure and flow readings be recorded via data logging for a period of two weeks in the post installation M&V phase.
Net-to-Gross Review	IOU Proposal: Not provided
	ED Assessment: Assuming that the rebate was not critical in the decision, this project received a score of 0.51. The customer indicated a high likelihood that he would have done the project without the program (7/10), however the initial audit was a major factor in why the customer decided to do the project in the first place (10/10). Customer doesn't have specific payback criteria, so the rebate was not critical, but an important program factor (8/10) nonetheless.
	ED Recommendation: 0.51

Comment [FR3]: Do you mean this NTG score was 0.3? Or 0.7?

Comment [FR4]: If you take first score to be 0.3, then the average of the 3 scores is 0.7 (2 1/3). If it was indeed 0.7, then the average score is 0.833 (2 5/3).