

Ex Ante Show Stopper Review Findings

Table 1-1: Project Information

IOU	Pacific Gas & Electric (PGE)
Application ID	1275-08
Application Date	03/06/2014
Program ID	PGE23028
Program Name	Heavy Industry Energy Efficiency Program
Program Year	2014
Itron Project ID	X492
IOU Ex Ante Savings Date	03/07/2014
IOU CMPA Date	04/11/2014
CPUC Staff Measure Name	Furnace #2 Upgrade
Project Description	The scope of the project is to refurbish an existing glass furnace with energy reducing upgrades that allow capacity increases at lower gas input per unit of product delivered. The estimated energy savings are 959,419 therms/yr.
Date of CPUC Staff Review	04/29/2014
Primary Reviewer / Firm	John Hill/ James J. Hirsch & Assoc.
Review Supervisor / Firm	Nikhil Gandhi / Strategic Energy Technologies, Inc.
CPUC Staff Project Manager	[REDACTED]
CPUC Staff Policy Authorization (as needed)	
Type of Review (Desk, On-site, Full M&V, Tool)	Desk
CPUC Staff Recommendation	The proposed project is conditionally approved, pending fulfillment of directives in this disposition and M&V true-up of energy savings.

Measure Description

The facility produces glass for the beverage industry. It operates a number of glass furnaces that must be refurbished regularly – typically every seven year. This project proposes a number of alterations and upgrades to their Number 2 furnace in lieu of its scheduled normal refurbishment. The upgrades to the furnace are expected to reduce the natural gas per ton of glass throughput (called the pull rate) and to increase the amount of glass available for sale by approximately 40%. This increase is a result of an estimated 33% increase in furnace capacity plus a 5% reduction in the rejection rate of the glass produced.

The project cost is estimated at approximately \$59,000,000. Re-furbishing the furnace to existing conditions (the typical approach at the facility) is expected to cost \$55,361,978. Therefore, the estimated incremental project cost is \$3,638,022. The estimated energy savings are 959,419 therms/yr. At an estimated customer gas cost of .40 \$/therm, the project payback period before PGE EE incentive is 9.5 years; after PGE incentive is 7.0 years.

Summary of Show Stopper Issues

Staff has reviewed the PFS PGE submitted and accepts most assertions, approaches and conclusions provided. However, one assertion is uncertain at this point. This project includes a product expansion component, with net product delivery increasing by approximately 40%. Of that, 33% is a result of increased furnace capacity and 5% is a result of process improvements that reduce rejected glass. The 5% production increase is accepted in theory with the final impact provided by the proposed M&V effort.

However, the baseline energy use associated with the 33% increase in furnace capacity is in question. The ex-ante savings estimates and M&V final savings values are determined by a historical baseline production efficiency based on the existing furnace capacity. No information or evaluation is presented that confirms this baseline production efficiency would not change at the higher production rate. For example, part of this proposed project is an expansion of the melter. If this is the major component that leads to the 33% increase in furnace capacity, and if the melter expansion could be applied to the existing furnace design, then one might expect the overall baseline furnace efficiency might decrease as furnace losses could be seen as fixed in conjunction with a fixed melter energy input rate per quantity of glass produced. Because of this, supporting documentation is required that confirms the proposed fixed baseline production efficiency would occur at the higher production rate. Further, the PFS asserts that the industry standard practice baseline would be to use the same type of furnace lining and expansion components without providing any supporting documentation. Based on evaluation results from the 06-08 cycle for furnace relining projects, this assumption might not be unrealistic. However, that evaluation was for projects initiated nearly ten years ago and the baseline practices could have changed. Staff does not wish to enforce the ISP guidance document requirement to conduct

a low-rigor ISP study for this project, which exceeds the ISP threshold of 200,000 therms. However, a low-rigor study should be initiated and results available before another project of this nature is submitted by any IOU.

Staff requires final project invoices as part of the final project review to true-up the incremental measure cost estimated in the PFS.

Review Conclusion/Requested Utility Action Items

The utility is to: (1) submit explanation supporting the unchanged baseline energy intensity with capacity expansion, and (2) provide final project cost invoices and trued-up incremental costs. Commission Staff may waive further review of this project if satisfactory explanation for the baseline energy intensity is provided, subject to PG&E truing up the incremental cost per draft guidance document.