Phase I Ex Ante Review Findings

Table 1-1: Project Information

IOU	San Diego Gas & Electric
Application ID	[redacted]
Application Date	Not provided
Program ID	SDGE 3105
Program Name	Commercial & Industrial Energy Efficiency Program
Program Year	2013
[redacted] **Project ID**	[redacted]
IOU Ex Ante Savings Date	Not provided
CPUC Staff Measure Name	Replace Injection Molding Machines (IMMs)
Project Description	[redacted] an unquantified number of [redacted] (all under [redacted]
Date of CPUC Staff Review	12/12/2013
Primary Reviewer / Firm	[redacted] / [redacted]
Review Supervisor / Firm	[redacted] / [redacted]
CPUC Staff Project Manager	Peter Lai / 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	Ex ante savings are not approved until the IOU provides information that identifies each IMM to be replaced, and validates the RUL, vintage, and current condition of each IMM in question, including maintenance schedules, records, and component issues for the past few years.

Measure Description

Replace an unquantified number of standard hydraulic IMMs (all under [redacted] with all-electric IMMs.

Summary of Review

The Investor-Owned-Utility (IOU) submitted the following documents for Data Request (DR) EEGA 7886 for this Phase I ex ante review:

- Transmittal Memorandum for DR 7886;
- A one paragraph DR response: EEGA 7886 SDGE Template.doc
- A series of five (5) email messages between the SDGE and the third party implementer, Onsite Energy.

CPUC staff notes that no application or energy savings calculation were provided, and that few project details were included in DR response. It appears that the IOU and 3rd party implementer are attempting to gauge whether or not this project will pass the CPUC sniff test and perhaps get direction before the customer makes a final decision.

It appears that customer is replacing multiple (quantity not specified) 55-ton Arburg standard hydraulic IMMs with 30-ton Sumitomo all-electric IMMs. No specifications or model numbers were provided in the SDG&E documents. Clearly, all of the to-be-replaced IMMS are less than the 200 ton capacity threshold (specified in the CPUC's January 2013 ISP baseline study authored by ERS) and are considered small IMMs.

Customer manufactures parts in the irrigation industry, and therefore, since they are not making medical parts they can use the in situ hydraulic IMM for the first baseline (RUL period) and the Hybrid 1 IMM efficiency for the second baseline (EUL – RUL period) of this ER project.

Baseline IMMs & Pre-retrofit M&V

This is a retrofit IMM measure with an apparent early replacement (ER) claim. Although no RUL was identified in any of the SDG&E uploaded documents, the 3rd party implementer, Onsite Energy has "implied" that there is more than 1 year of useful life. At a minimum a pre-verification will need to be done to validate the RUL, vintage and condition of the pre-existing Arburg hydraulic machines by obtaining nameplate photos that include the manufactured dates, model & serial numbers of each machine being replaced. For any machine past their EUL period (noted as 15 years for IMMs), the energy savings will be based on the Hybrid 1 baseline energy efficiency, which is currently accepted by CPUC as [redacted] kWh/kg.

CPUC staff will require the 3rd party to conduct a one month-long pre-retrofit M&V on each of the in situ standard hydraulic IMMs being replaced.

Proposed IMMs and Post-retrofit M&V

Customer/3P is claiming that the proposed new Sumitomo all-electric machine produces at an even higher efficiency than a typical all-electric machine, reducing heating energy by 30% compared to other standard all-electric machines. Note: The current accepted (SPC) efficiency is [redacted] **kWh/kg** for all-electric IMMs.

CPUC staff will require the customer to conduct **post-M&V** power monitoring (kW, Volts, PF, Amps) for a minimum of one month using a maximum of five-minute intervals on each new IMM machine.

Production data must also be monitored and logged over the same one-month period that includes all parts including scrap waste material (shot sizes). CPUC will require a weighted average shot sizes and product energy rates (kWh/kg) are for each part made on each IMM.

In the post-install case, a method to normalize production data will be requested in order to capture seasonal product variations and production rates. If production varies significantly over the year, then two months of post-isntall M&V will be recommended.

Proposed IMMs and Post-retrofit M&V

Often times with replacement machines, keeping track of apple-for apples comparisons with the pre-existing machines can be tricky as it is common for the customer to shift parts, molds and IMMs, possibly mixing-and-matching under modified plant conditions or production associated with the new IMMs installed.

Incremental measure costs will need to be verified for the second baseline after project implementation. We will collect invoices for the new all-electric machines and require quotes for Hybrid 1 machine equivalents.

Review Conclusion

Ex ante savings are not approved until the IOU provides information that identifies each IMM to be replaced, and validates the RUL, vintage, and current condition including maintenance schedules and issues for the past few years.

Summary of CPUC Staff Requested Action by the IOU

CPUC Staff requests that the IOU undertake the recommended steps and submit the following information due on 1/3/2013 (or 10 non-holiday business days from submittal date to SDGE):

1. Identify the RUL of each IMM that is proposed to be replaced. Provide the vintage (age) and condition of the pre-existing Arburg hydraulic IMMs by obtaining nameplate photos that include the manufactured dates, model & serial numbers of each machine being replaced;
2. To help keep track of all IMMs (pre- and post) identify each pre-machine with an appropriate plant IMM number and list associated parts produced by each IMM. A simple spreadsheet will suffice.
3. Provide a history of prior IMM replacements with the age of IMMs replaced in the past;
4. Submit production or scrap rates (or various shot sizes) over the last one year;
5. Show evidence that maintenance costs were not abnormal in the recent past, continued availability of the existing machines and its parts;
6. Confirm that products to be manufactured going forward can be accomplished by the pre-existing Arburg IMMs - in terms of volume, precision and machine capability.
7. Provide the customer's production variation by identifying when annual or seasonal high and low production periods occur.