Final Ex Ante Review Findings

Table 1-1 Project Information

IOU	PGE
Application ID	PFS-1261-12-701
Application Date	01/25/2013
Program ID	PGE2234
Program Name	Comprehensive Food Processing Audit and Resource Efficiency Program
Program Year	2012
CPUC Project ID	X246
IOU Ex Ante Savings Date	10/23/2014
Measure Name	Evaporation process upgrade
Project Description	The project involves an upgrade of an evaporation process. The measure proposes to substitute the traditional evaporation method requiring large amounts of steam with a proprietary mechanical preparation and filtration technique, eliminating steam consumption.
Date of CPUC Review(s)	2/15/2013 & 11/14/2014
Primary Reviewer and Firm	Kunal Desai & Kumar Chittory/Itron
Review Supervisor and Firm	Keith Rothenberg/Energy Metrics
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review
CPUC Recommendation	CPUC Staff waives further review. IOU shall apply the 0.9 GRR at the time of savings claim, upload the final claim ID numbers to CMPA; and upload all further project documentation not previously uploaded to CMPA. NTGR Assessment: This customer received a NTGR of 0.69.

Measure Description

This measure proposes to substitute the traditional evaporation method in a salt manufacturing facility requiring large amounts of steam with a proprietary mechanical preparation and filtration technique. Energy savings will result from elimination of large quantities of steam used in the traditional evaporation process to produce the same quantity of finished stage product of the same specification using the new process.

Summary of Review

Extensive M&V was completed in a satisfactory manner, as the IOU followed directives discussed in prior parallel reviews.

The IOU provided responses to the issues that were raised in the previous EAR dispositions. CPUC staff did not complete an in-depth review of the M&V data to make sure that previous guidance was followed. The CPUC staff might review this project closely as part of the ex-post custom project review process. In one of the earlier communications, CPUC staff recommended that the old gas boiler equipment be decommissioned and removed from the facility. Even though the gas boiler is decommissioned and in no condition to return to service, it is still at the facility. IOU provided a picture of the old boiler to support that it is no longer in a usable condition and cannot be brought back to service.

The IOU also provided invoices to support the project cost of $6,660,475. The incremental cost for this project is $2,672,931. The present value incremental measure cost was not determined based on the draft project cost guidance document. For the early retirement projects, the cost guidance document cites the following:

> D.12-05-015 at 349
> "The measure or project cost utilized in an early-retirement case is the full cost incurred to install the new high-efficiency measure or project, reduced by the net present value of the full cost that would have been incurred to install the standard efficiency second baseline equipment at the end of the remaining-useful-life period. Thus, the early-retirement cost is higher than the incremental cost used in a replace-on-burnout or normal-replacement case, only by the time value of the dollar amount of the standard equipment full installed cost, using our adopted cost-effectiveness discount rate to calculate that time valuation. As with all measures, our policy expects that incentives offered for early retirement will not exceed the actual early retirement cost."

This Commission decision direction must be considered in the future for all Early Retirement Projects. Per IOU program rules the incentive for the project was capped at 50% of the total project costs at $3,250,000; however, for future projects described above, the ER/EUL guidance must be followed using the net-present value incremental measure costs to ensure the incentive does not exceed the TRC cost of the project. An example calculation is shown below:

If PC=project total cost, INC=incremental cost over code/ISP, D=discount rate, and RUL is the remaining life of early retired equipment, then the TRC cost at time of project installation is:

TRC cost = PC – ((PC-INC)/(1+D)^RUL).

The incentive must not exceed the TRC cost. For all future dual baseline projects, the documentation must include a calculation of the TRC cost.

CPUC staff estimate the savings weighted RUL for this project to be 6 years. CPUC staff calculated the TRC cost for this project using an RUL of 6 years, a discount rate of 7.66%, a full cost of $6,660,475 and an incremental cost of $2,672,931. The TRC cost for this project is $4,099,654 calculated as detailed below.

TRC cost = PC – ((PC-INC)/(1+D)^RUL), where PC=project total cost, INC=incremental cost over code/ISP, D=discount rate, and RUL is the remaining life of early retired equipment.

TRC cost = $6,660,475 – (($6,660,475-$2,672,931)/(1+7.66%)^6.0)

TRC cost = $4,099,654.

Review Conclusion

CPUC staff waives further review. The IOU will apply the 0.9 GRR at the time of savings claim, and upload to the CMPA the final claim ID numbers, including any project documentation not previously uploaded to CMPA.

NTGR Assessment: This customer received a NTGR of 0.69.

For all future projects (submitted after receipt of this review) CPUC staff requires that the IOU:

1) For the post-installation M&V savings true-up, a stable production period is key to accurate energy savings calculations over a full year. This helps avoid the issue of "cherry-picking" the data for the greatest energy savings. The post-installation M&V must not be conducted until the production data has stabilized. It is noted that this project took four months after measure installation before production had stabilized; for large energy saving projects, this could amount to major errors.
2) High accuracy power meters should be used by the IOU or the third party implementer to measure power factor (PF) and calibrated frequently to avoid large measurement errors, such as the 35% discrepancies found at this site.
3) Due to the cost of removal of the boiler, decommissioning, disabling, and demolition (or recycling) of replaced equipment is required and should be documented. When a large

piece of equipment (such as the boiler or a huge furnace at a refinery) is decommissioned, the IOU has the discretion to allow the piece of equipment to remain onsite, albeit in an unusable condition. CPUC staff reminds the IOU to warn their customer's that re-selling the equipment on the California "grid" constitutes a violation in program rules and CPUC policy. This stipulation is no different for computers (server room equipment), refrigerators, griddles, ovens, and other replaced equipment within California borders.

4) For early retirement projects, the present value incremental measure cost must be determined based on the draft project cost guidance document. For the early retirement projects, the cost guidance document cites the following:

D.12-05-015 at 349
"The measure or project cost utilized in an early-retirement case is the full cost incurred to install the new high-efficiency measure or project, reduced by the net present value of the full cost that would have been incurred to install the standard efficiency second baseline equipment at the end of the remaining-useful-life period. Thus, the early-retirement cost is higher than the incremental cost used in a replace-on-burnout or normal-replacement case, only by the time value of the dollar amount of the standard equipment full installed cost, using our adopted cost-effectiveness discount rate to calculate that time valuation. As with all measures, our policy expects that incentives offered for early retirement will not exceed the actual early retirement cost."

5) For all future dual baseline projects, the documentation must include a calculation of the TRC cost: If PC=project total cost, INC=incremental cost over code/ISP, D=discount rate, and RUL is the remaining life of early retired equipment, then the TRC cost at time of project installation is: TRC cost = PC – ((PC-INC)/(1+D)^RUL).

Table 1-2 Energy Savings Summary, Project Costs & Incentive

Description	IOU Ex Ante Claim	CPUC Staff Conclusions
First Year kWh Savings	1,763,767	Waive
First Year Peak kW Savings	134.74	Waive
First Year Therms Savings	3,130,421	Waive
kWh Savings (RUL Period)	1,763,767	Waive
Peak kW Savings (RUL Period)	134.74	Waive
Therms Impact (RUL Period)	3,130,421	Waive
kWh Savings (RUL thru EUL Period)	1,763,767	Waive
Peak kW Savings (RUL thru EUL Period)	134.74	Waive
Therms Savings (RUL thru EUL Period)	3,130,421	Waive
Annual Non-IOU Fuel Impact (RUL Period)	N/A	N/A
Annual Non-IOU Fuel Impact (RUL thru EUL Period)	N/A	N/A
Project Costs for Baseline #1 (RUL or EUL)	$6,660,475	Waive
Project Costs for Baseline #2 (EUL minus RUL period)	$2,672,931	Waive
Project Incentive Amount	$3,250,000	Waive