

Phase I Ex Ante Review Findings

Table Error! No text of specified style in document.-1: Project Information

IOU	PG&E
Application ID	NC0127306
Application Date	10/31/2013
Program ID	PGE21042
Program Name	Nonresidential New Construction Program (Savings By Design)
Program Year	2013
Itron Project ID	X435
IOU Ex Ante Savings Date	11/21/2013
CPUC Staff Measure Name	New Construction Plastic Recycler
Project Description	Installation of a new construction plastic extrusion line with a high efficiency extruder
Date of CPUC Staff Review(s)	11/26/2013
Primary Reviewer / Firm	Paolo Pecora/ERS
Review Supervisor / Firm	Joseph Ball/Itron
CPUC Staff Project Manager	██████████ / 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	Energy savings conditionally approved

Measure Description

This project proposes the installation of a new recycled plastic processing line with a high efficiency tangential cutter-compactor extruder. The new unit can accept feed material with a higher moisture content (than the baseline unit), thus eliminating the need for additional drying of the feed material, resulting in reduced energy use as compared to a baseline unit that does not accept the higher moisture material. Moisture is introduced upstream during a wash cycle of the recycled plastic feed material. The proposed equipment production capacity is comparable to two processing lines with the baseline equipment. The baseline equipment identified by the customer consists of used equipment that is available to them from a sister company. Furthermore, this equipment is still being produced and is commercially available from the manufacturer. The customer estimates the annual operating hours at 8585 hours/year and the projected production rate at [REDACTED] lbs/hr.

The revised IOU estimate of annual energy savings is 2,220,000 kWh with a peak demand reduction of 259 kW. The incremental measure cost is claimed to be \$752,685. The proposed IOU incentive is reduced to \$225,700.

Summary of Review

During the parallel review process, the Investor-Owned-Utility (IOU) submitted the following revised documents for this Phase I review:

- NRNC 126691 [REDACTED] Final Report R1.pdf
- 126691-IND AESC Calcs R1.xlsx
- 126691-IND Baseline Equipment, Proposed Equipment, and Vernon Plant Info files

The Davis-Standard equipment that is identified as the baseline is still manufactured and available from the manufacturer. The customer could purchase used equipment from their sister company or purchase this equipment new. The savings calculation is using the rated equipment power adjusted to the projected production rate ([REDACTED] lb/hr) and an assumed load factor of 70%. The savings will be verified by post-installation Measurement and Verification (M&V) and the actual production rate will be documented.

The incremental cost for this project is documented with a 2011 invoice for the baseline equipment and a quote for the proposed equipment. It is not clear if the baseline equipment invoice includes those pieces of equipment which perform the additional steps that are required with the baseline equipment (dry grinder, hot air dryers, and agglomerator). If they were not included, then the cost of this equipment and the labor to install all components should be included in the baseline cost to determine the correct incremental cost.

Review Conclusion

Project energy savings are conditionally approved pending information from the IOU documenting the post-installation M&V plan and IR review, and providing the total baseline equipment cost, and incremental costs broken down by material and labor for all required functional pieces of equipment.

Summary of CPUC Staff Requested Action by the IOU

CPUC Staff requests that the IOU undertake the recommended steps and submit the following information:

1. Provide Measurement & Verification Plan results that verify the actual power of the installed equipment, the annual operating hours and production rate. Provide two weeks of power data with a 15-minute interval and two weeks of daily production data. M&V should be used to determine the equipment load factor by comparing the actual power to the rated power of the installed equipment. This load factor should then be applied to the rated power of the baseline equipment to adjust the baseline power. The kW savings is the difference between the actual power and the adjusted baseline power. The actual production rate (in lbs/hr) and operating hours should be verified through M&V and then used to calculate the annual energy use for both the baseline and the installed equipment.
2. If the baseline equipment invoice does not include the “installed” costs of the dry grinder, hot air dryers, and agglomerator, these costs should be documented and contained in the total baseline cost (including installed labor of each piece of baseline equipment). A corrected incremental cost should then be calculated. If the cost of this equipment was already included in the baseline equipment invoice, this should be modified for clarity.

Table 1-2 Review Findings

Reviewed Parameter	Analysis
Project Baseline Type (Early Replacement, Normal Replacement, Capacity Expansion, New Construction, System Optimization, Add-on Measures, Major Renovation) Note: For early retirement projects only, include RUL through EUL baseline)	IOU Proposal: New Construction
	CPUC Staff Assessment: New Construction
	CPUC Staff Recommendation: None
Project Baseline Technology (in situ equipment, Title 24 (specify year), other code or other efficiency level (specify), industry standard practice - ISP)	IOU Proposal: ISP
	CPUC Staff Assessment: Accept
	CPUC Staff Recommendation: None
Project Cost Basis (Full Incremental, or Both. Note: For early retirement projects, include RUL through EUL cost basis treatment)	IOU Proposal: Incremental cost
	CPUC Staff Assessment: Incremental cost
	CPUC Staff recommendation: Document the total baseline equipment cost including the dry grinder, hot air dryers, and agglomerator.
RUL (required for early retirement projects only, otherwise N/A)	IOU Proposal: N/A
	CPUC Staff Assessment: N/A
	CPUC Staff recommendation: N/A
EUL (for each measure)	IOU Proposal: 25 years
	CPUC Staff Assessment: 20 years maximum per CPUC policy
	CPUC Staff Recommendation: None
Savings Assumptions	IOU Proposal: kW is linear to production rate, equipment operates at 70% of rated power
	CPUC Staff Assessment: Same
	CPUC Staff Recommendation: Perform post-installation M&V to verify all key parameters and adjust energy savings.
Calculation Methods/Tool review	IOU Proposal: 70% of rated kW of equipment operating 8585 hours/year
	CPUC Staff Assessment: Reasonable assumptions based on customer input

Reviewed Parameter	Analysis
	and EAR
	CPUC Staff Recommendation: Adjust kW and hours based on post-installation M&V
Pre- or Post-Installation M&V Plan	IOU Proposal: Post-installation M&V added after initial EAR
	CPUC Staff Assessment: Post-installation M&V is necessary
	CPUC Staff Recommendation: Perform post-installation M&V as described in the above section titled: "Summary of CPUC Staff Requested Action by the IOU"
Net-to-Gross Review	IOU Proposal: Not provided
	CPUC Staff Assessment: Not assessed
	CPUC Staff Recommendation: TBD

Table 1-3 Energy Savings Summary, Project Costs & Incentive

Description	IOU Ex Ante Claim	CPUC Staff Recommendations
First Year kWh Savings	2,940,000 2,220,000	TBD
First Year Peak kW Savings	343259	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 (RUL thru EUL Period)	2,940,000 2,220,000	TBD
Peak kW Savings (RUL thru EUL Period)	343259	TBD
Therms Savings (RUL thru EUL Period)	N/A	N/A
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)	Incremental cost - \$752,685	TBD

Phase 1 Ex Ante Review Findings

Description	IOU Ex Ante Claim	CPUC Staff Recommendations
Project Costs for Baseline #2 (EUL minus RUL period)	N/A	N/A
Project Incentive Amount	\$298,900 \$225,700	TBD