

Final Ex Ante Review Findings

Table 1-1: Project Information

PA	PG&E
Application ID	NC0127206
Application Date	9/18/2013
Program ID	PGE21042
Program Name	Savings by Design
Program Year	2013
CPUC Project ID	X436
PA Ex Ante Savings Date	6/26/2014
Measure Name	Install mechanical vapor re-compressor (MVR)
Project Description	Install mechanical vapor re-compressor (MVR) to recover waste heat and increase production capacity.
Date of CPUC Staff Review	7/2/2014, 8/11/2014, 12/20/2014
Primary Reviewer / Firm	Keith Rothenberg/Energy Metrics
Review Supervisor / Firm	Jeff Hirsch/JJ Hirsch & Associates
CPUC Staff Project Manager	██████████ / California Public Utilities Commission, Energy Division
CPUC Staff Policy Authorization (as needed)	Details of issues and disposition recommendations were reviewed by Jaclyn Marks and Pete Skala
Type of Review (Desk, On-site, Full M&V, Tool)	Desk
CPUC Staff Recommendation	<p>The ex ante savings estimates are not approved. PG&E oversight efforts on this project were unacceptable. The utility has not followed critical aspects of the Savings by Design (SBD) Program process and has not followed the ex ante review process directed by the Commission resulting in the bypass of any meaningful CPUC Staff review.</p> <p>The project is ineligible for any gross savings claims based on CPUC process and PG&E program rule violations. CPUC Staff require that this project's ex ante savings</p>

	<p>claim be set to zero.</p> <p>CPUC Staff find the circumstances of this project to be very disappointing and require assurances from PG&E that this project will be reviewed in detail with the entire SBD team and utility reviewers to ensure these deficiencies do not occur again.</p>
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Measure Description

The project documentation describes an existing tomato processing facility that will increase its tomato paste production capacity by adding a mechanical vapor re-compressor (MVR) to re-compress waste heat. The recovered heat will be used to pre-concentrate raw product before it enters the three effect evaporator, increasing the system throughput.

Summary of Review

This document is CPUC Staff's third and final review for this project. The Program administrator (PA) submitted the following documents on 11/4/2014 for this Final review:

- 126591-██████ AESC Calcs Add.xlsx,
- 126591-██████ AESC Calcs R1.xlsx,
- 126591-██████ AESC Effective Useful Life Declaration.pdf,
- 126591 [Customer Name] Plant 2 Evaporator Application.pdf,
- 126591-██████ AESC Response EAR 10312014.docx; and
- Check list NC127206 (X436) Post.xlsx.

CPUC Staff have reviewed the documents provided by the PA on November 4, 2014. The PA has not followed critical aspects of the Savings by Design (SBD) Program process and has not followed the ex ante review process directed by the Commission resulting in the bypass of any meaningful Commission Staff review. Key findings include:

- CPUC Staff selected the project for review in October 2013. During the project review, CPUC Staff learned that prior to the utility's initial documentation submission on June 26, 2014 equipment had in fact been ordered and installed. By providing documents to CPUC Staff more than 8 months after the project was selected for ex ante review, the PA did not engage in a parallel review process which would have enabled CPUC Staff review of the project and oversight of the program. Refer to the project timeline shown below.

For all custom projects, D.11-07-030 requires that:

- Pipeline projects shall not have signed incentive agreements before CPUC Staff have an opportunity to select or waive a project via the bi-monthly CMPA project list submission.
- For projects selected for ex ante review, CPUC staff must have an opportunity to review and approve complete project documentation including ex ante savings estimates before incentive agreements are executed by the PA. PAs can choose, after submitting complete project documentation to move forward with the project

with the understanding that the outcome of the Commission staff review and approval will become effective as if the project was waiting for the outcome¹.

- For all projects, including those selected by CPUC Staff for ex ante review, project installation shall not begin until complete documentation has been compiled into the PA CMPA, ex ante savings parameter estimates have been developed and reviewed by the PA, if the project has been selected for review the complete project documentation has been uploaded to the CPUC CMPA such that Commission Staff have an opportunity to review and approve project documentation, and a PA/customer agreement has been executed by both parties. Any exception to this shall be approved in advance by Commission staff.
- CPUC Staff investigation has found no evidence that the PA provided an ex ante savings estimate prior to executing an incentive agreement.
- CPUC Staff investigation has found no evidence that the PA executed an incentive agreement before construction began on this project.
- CPUC Staff investigation has found no evidence that the PA provided any meaningful documentation or analysis to influence the customer prior to the customer ordering equipment and commencing construction on the project. CPUC Staff have concluded that this customer is likely a free rider.
- CPUC Staff believe that the incremental cost estimate provided by the PA does not accurately reflect the cost of the baseline system. The incremental measure cost is likely close to zero when all required baseline system equipment is accurately accounted for.

CPUC Staff have constructed the following timeline for the project:

Project Timeline:

- July 18, 2013: Date conceptual design began **
- August 20, 2013: Date detailed design began **
- September 17, 2013: Date of completion of design **
- September 18, 2013: Customer Program application signature date
- September 24, 2013: Date order placed for the new evaporator **
- October 2013: Project selected for ex ante review.
- January 07, 2014: Construction start date. **

¹ D. 12-11-015

June 26, 2014: PG&E uploaded project documents (without project application or customer agreement) to the CMPA.

July 16, 2014: CPUC Staff upload Phase I EAR to the CMPA

July 21, 2014 Construction completion date. **

July 24, 2014 Project commissioning completion date **

August 1, 2014: PG&E Upload Response to Phase I EAR

August 18, 2014: CPUC Staff upload Phase II EAR

November 4, 2014: PG&E upload Installation report and response to Phase II EAR

****Statements by PG&E-unverified and information not supplied to staff until 11/4/14 (after project completion).**

The premise of the SBD program² is that it “encourages energy-efficient building design and construction practices, promoting the efficient use of energy by offering up-front design assistance supported by financial incentives based on project performance.” The SBD program has several key steps that exhibit the Program’s influence in guiding the customer to adopt more efficient design measures. These steps include:

- confirming that design changes are feasible and establishing initial energy efficiency targets for the project;
- working with participants to determine how to optimize the energy efficiency of the project;
- utility staff or contractors analyzing construction documents and recommending energy efficiency enhancements and efficiency upgrade recommendations by comparing alternative systems and design options;
- and prior to the customer ordering, purchasing, and/or installing the selected energy efficient options, the program administrator issues an Incentive Agreement to the Owner delineating the proposed project details, estimated incentive amounts, and terms and conditions.

No project documents were supplied to CPUC Staff for review prior to the installation of the equipment for this new construction project. Despite CPUC Staff requests to PG&E in the Phase II EAR dated 8/18/2014 for this project, CPUC Staff’s investigation to date has found no evidence that PG&E established any initial energy efficiency targets for the project, no evidence

² The SBD On-line handbook may be found at the following web address:

<http://www.savingsbydesign.com/book/savings-design-online-program-handbook#booknode-448>

that the utility worked with the customer to determine how to optimize the energy efficiency of the project, and no evidence that Utility staff analyzed construction documents and recommended energy efficiency enhancements and efficiency upgrade recommendations by comparing alternative systems and design options prior to the customer ordering equipment.

PG&E did not submit a signed customer agreement. A signed customer agreement is a required program step. The customer agreement should delineate the proposed project details, estimated incentive amounts, and terms and conditions. As noted above, the utility's pre-installation report was completed after the project installation was substantially complete so it may be likely that no agreement was executed prior to project installation. CPUC Staff also believe there may be problems with the customer project application supplied by the PA on August 1, 2014.

The Savings By Design program guidelines note that "If ordering, purchasing and/or installing of the agreed-upon energy efficient equipment is initiated prior to Utility's execution of the Agreement, the Utility or the CPUC Energy Division may disqualify the project, thus the risk is entirely the Owner's", and that "Projects are subject to CPUC Energy Division approval, which can place execution of Incentive Agreements on indefinite hold."

Although the project had been selected by Commission Staff for ex ante review in October 2013, PG&E proceeded with the project without Commission Staff review and approval, and first submitted documentation 8 months (June 26, 2014) after Commission Staff project selection.

Appendix B of D 09-09-047, describes the Custom Project Review Process including the guiding principles of the ex ante review process. Principal number 2 is "The Custom Measure and Project Review Process is intended to allow Energy Division (ED) to review customer projects in parallel with the IOUs, thereby allowing for maximum customer convenience and program oversight."

The section of D 09-09-047 Appendix B describing "Pre-Installation Review" states that "the IOUs shall provide the Energy Division the opportunity to participate in any site visits, pre-installation inspections, customer interviews, pre-installation M&V, or spot measurements that may occur during this and subsequent phases."

D 11-07-030 states "Energy Division's review can only be conducted in parallel with a utility's internal review if the utility provides the project information to Energy Division in a timely manner"

According to information provided by PG&E, project construction began on January 7, 2014 and was completed on July 21, 2014. The "Pre Installation Report" for the project provided in PG&E's initial submission for the project to CPUC Staff on June 26, 2014 is dated June 6, 2014, by which time construction was substantially underway and nearing completion.

By providing documents to CPUC Staff more than 8 months after the project was selected for ex ante review, the utility did not engage in a parallel review process which would have enabled staff review of the project or staff oversight of the program. Staff was denied any opportunity to participate in, or review the results of any site visits, pre-installation inspections, customer interviews, pre-installation M&V, or spot measurements that may have occurred. The utility did not provide the project information to CPUC Staff in a timely manner.

Review Conclusion

The ex ante savings estimates are not approved. PG&E oversight efforts on this project were unacceptable. The PA has not followed critical aspects of the Savings by Design (SBD) Program process and has not followed the ex ante review process directed by the Commission resulting in the bypass of any meaningful CPUC Staff review.

The project is ineligible for any gross savings claims based on CPUC process and PG&E program rule violations. CPUC Staff require that this project's savings claim be set to zero.

CPUC Staff find the circumstances of this project to be very disappointing and require assurances that this project will be reviewed in detail with the entire SBD team and PA reviewers to ensure these deficiencies do not occur again.

Summary of CPUC Staff Required Action by the PA

CPUC Staff require that the PA undertake the recommended steps and submit the following information due on 1/15/2015 (or 14 days from submittal date to PA):

1. Upload all final project documents revised to reflect CPUC staff's findings in this disposition to the CMPA folder for this application.

For all future projects (submitted after receipt of this review) Commission staff require that the PA:

1. During the project review and execution, the PA should ensure that the Energy Efficiency Program guidelines, policies and procedures are being followed.

The SBD program process, as documented in the Program Handbook was not followed for this project. Commission staff have identified the following deficiencies in the PA's execution of the SBD guidelines, policies and procedures. Key participation requirements and program milestones detailed in Section 1-4 of the Handbook were not met:

- a) CPUC Staff's investigation found no evidence that the utility established any initial energy efficiency targets for the project.
 - b) CPUC Staff's investigation found no evidence that the utility worked with the customer to determine how to optimize the energy efficiency of the project
 - c) CPUC Staff's investigation found no evidence that Utility staff analyzed construction documents and recommended energy efficiency enhancements and efficiency upgrade recommendations by comparing alternative systems and design options prior to the customer ordering equipment. The PG&E consultant "pre-install" report is dated 6 June 2014 (after the installation was substantially completed).
 - d) PG&E did not provide Commission staff with project paperwork, savings estimates, and estimated incentives prior to project authorization (via either customer agreement or other mechanism) or even project installation as required by D.11-07-030; although a program administrator can decide to "assume the risk" of proceeding without waiting for receipt of staff approval of savings estimates and incentives the program administrator cannot proceed without supplying any information on a project as required by the adopted ex ante review process.
 - e) PG&E did not submit any evidence to Commission Staff of executing an incentive agreement with the customer. The incentive agreement should delineate the proposed project details, estimated incentive amounts, and terms and conditions. As noted above, the utility's pre-install report was completed after the project installation so it may be likely that no agreement was executed prior to project installation.
 - f) The incremental cost calculation appears to not consider significant aspects of the alternative equipment required which may have reduced the incremental cost to almost zero (the cooling tower and its piping and pumps and additional boiler capacity are likely required in the baseline system).
 - g) The SBD Program requires that prior to ordering, purchasing, and/or installing the selected energy efficient options the customer signs, dates, and returns the Incentive Agreement to the SBD Representative. By signing the Agreement, the customer acknowledges that they have read and agree to all program eligibility requirements. The Utility's counter-signature and date indicate funds have been reserved for the project for a period of up to 48 months. An executed incentive agreement was not provided for this project.
2. The PA should ensure that the ex ante review policies and guidelines are being followed. For this project, CPUC Staff identified the following PA deficiencies in the ex ante review Process

- a) D 11-07-030 states "Energy Division's review can only be conducted in parallel with a utility's internal review if the utility provides the project information to Energy Division in a timely manner". The utility's first submission of documents was more than 8 months after Commission Staff had selected the project for ex ante review. During the project review, Commission Staff learned that prior to the utility's initial documentation submission on June 26, 2014 equipment had in fact been ordered and installed.
 - b) D 09-09-047 Appendix B describing "Pre-Installation Review" states that "the PAs shall provide the Energy Division opportunity to participate in any site visits, pre-installation inspections, customer interviews, pre-installation M&V, or spot measurements that may occur during this and subsequent phases." PG&E failed to submit project documents in a timely fashion to allow meaningful Commission Staff review of the project. The delay in providing documents did not allow Commission Staff to review critical aspects of the project, such as eligibility, savings estimate, incentive estimates and caps relative to incremental cost, and requirements for M&V, before equipment was ordered and installed.
 - c) PG&E's delay in providing documentation did not allow Commission Staff the opportunity to review or comment on any aspects of the project before the project was committed and/or completed (although it remains unclear how and when the utility committed the project since an incentive agreement has not been provided.)
 - d) PG&E did not follow guidance regarding calculation methodology and M&V requirements for the project described in the Phase I ex ante disposition provided to the utility on 7/16/2014. PG&E ignored Commission staff's requested action item to conduct post-installation M&V.
3. The PA and its reviewers must be diligent in following the ex ante review process. Proper execution of the Commission authorized ex ante review process includes the following key requirements:
- a) Pipeline project lists are compiled by the PA in the format required by CPUC Staff and uploaded to the CMPA on a bi-weekly basis.
 - b) CPUC Staff select applications for review, other applications are waived from review. Pipeline projects must not have signed incentive agreements before CPUC Staff have an opportunity to select or waive a project.
 - c) For all projects, including those selected by CPUC Staff for ex ante review, project installation shall not begin until complete documentation has been compiled into the PA CMPA, ex ante savings parameter estimates have been developed and reviewed by the PA, if the project has been selected for review the complete project

- documentation has been uploaded to the CPUC CMPA such that Commission Staff have an opportunity to review and approve project documentation, and a PA/customer agreement has been executed by both parties. Any exception to this shall be approved in advance by Commission staff.
- d) For projects selected for ex ante review, CPUC staff must have an opportunity to review and approve complete project documentation including ex ante savings estimates before incentive agreements are executed by the PA. PAs can choose, after submitting complete project documentation to move forward with the project with the understanding that the outcome of the Commission staff review and approval will become effective as if the project was waiting for the outcome.

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

Description	PA Ex Ante Claim	CPUC Staff Recommendations
First Year kWh Savings	1,136,520	0
First Year Peak kW Savings	431	0
First Year Therms Savings	360,000	0
kWh Savings (RUL Period)	NA	NA
Peak kW Savings (RUL Period)	NA	NA
Therms Impact (RUL Period)	NA	NA
kWh Savings (RUL thru EUL Period)	1,136,520	0
Peak kW Savings (RUL thru EUL Period)	431	0
Therms Savings (RUL thru EUL Period)	360,000	0
Annual Non-PA Fuel Impact (RUL Period)	NA	NA
Annual Non-PA Fuel Impact (RUL thru EUL Period)	NA	NA
Project Costs for Baseline #1 (RUL or EUL)	\$1,072,415	TBD
Project Costs for Baseline #2 (EUL minus RUL period)	NA	NA
Project Incentive Amount	\$493,972	NA