

Phase II Ex Ante Review Findings

Table 1-1: Project Information

IOU	PG&E
Application ID	2K13188791
Application Date	4/28/13
Program ID	PGE21011
Program Name	Commercial Calculated Incentives (NRR Core)
Program Year	2013
Itron Project ID	X381
IOU Ex Ante Savings Date	7/29/2013
ED Measure Name	Wireless Pneumatic Thermostats
Project Description	Installation of an internet based, centralized EMS system that can control the operation of the HVAC units at 5 remote locations.
Date of ED Review(s)	09/11/13
Primary Reviewer / Firm	Sepideh Shahinfard/ Itron
Review Supervisor / Firm	Joseph Ball/ Itron
ED Project Manager	██████████ / California Public Utilities Commission, Energy Division
ED Policy Authorization (as needed)	
Type of Review (Desk, On-site, Full M&V, Tool)	Desk Review
ED Recommendation	The ex ante savings of 29,986 kWh and 337 therms are approved.

Measure Description

The project involves installing wireless thermostats in five (5) locations within a school district to control the HVAC units remotely through a centralized Energy Management System (EMS). The space conditioning is provided by a mixture of single zone packaged units, gas furnaces, and packaged terminal units. Energy efficiency upgrades of the HVAC units themselves are not part of the project. Three of the school campuses are equipped with a mixture of 24 hour thermostats and 7 day thermostats. The administration building and one of the campuses are equipped with seven day programmable thermostats. The applicant states that the 24-hour programmable thermostats are set to operate from 6:00 AM to 4:00 PM seven days per week during the school year except during extended breaks longer than 1 week. The seven-day thermostats operate from 6:00 AM to 4:00 PM four days per week, and 6:00 AM to 2:00 PM one day per week during the school year except during extended breaks longer than 1 week. The administration building currently operates from 7:00 AM to 4:00 PM year round. Different savings are claimed for the HVAC units that serve the heating and cooling needs of the zones that are controlled by 24-hr thermostats versus other zones that are controlled by 7-day programmable thermostats. Savings for zones controlled by 24-hr thermostats accrue by reducing runtime during weekends, holidays that are shorter than 1 week, and Wednesdays when the school is on a shortened schedule. Savings for zones controlled by 7-day programmable thermostats are claimed for reducing the runtime during holidays that are shorter than 1 week.

Estimated kWh and therm savings for this project are 29,986 kWh and 337 therms, or a reduction of approximately 20% of current HVAC energy use. There is no kW peak demand savings associated with this measure.

Summary of Review

During the phase II review the Investor Owned Utility (IOU) submitted the following documents for Data Request (DR) 7892 on 8/1/2013:

- Revised savings calculations;
- Vendor proposal;
- School calendar;
- Proposed manufacturer spec sheets;
- Incremental cost documentations; and
- PA package.

This phase II review focused on the information provided by the IOU in response to ED's phase I findings which included reviewing code requirements for setback thermostat controls. ED had several discussions with the IOU regarding the code requirements prior to 1992 and the fact that the code does not specifically state that thermostats must include separate weekday and weekend operation schedule prior to 1992. However, ED does not accept the pre-1992 Title-24 Code as the baseline control system type (which only requires 24-hour thermostats) because the thermostats are well beyond their effective useful life and any major repair or subsequent replacement of the HVAC equipment should have included the installation of 7-day programmable thermostats as required by code. However, considering that 1) the proposed

savings represent 16.1% of the baseline HVAC electrical energy usage and 4.4% of the baseline gas usage, and 2) the difference in savings using a 7-day programmable versus a 24-hour thermostat are not considerably different, and 3) assuming that the program induced the early replacement of the old thermostats, ED finds the savings acceptable. ED indicates that this approval is based on prior experience that district-wide energy management systems are capable of saving energy in the above range for schools in this climate zone, and therefore, ED waives any further review of this project. **ED advises the IOU to provide more substantive information on the pre-existing equipment and operating conditions for future projects which claim savings for ancient controls systems or when savings are based upon outdated codes and standards.** When more carefully documented, savings much greater than the 20% claimed for this project may be feasible.

Review Conclusion

The ex ante savings of 29,986 kWh and 337 therms are approved.