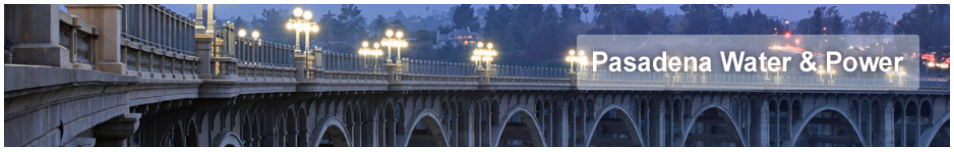
EM&V Evaluation Report 2014

Water & Energy Direct Install Program (WeDIP)

Prepared for:
Pasadena Water & Power (PWP)



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Section 1 Executive Summary

The Water and Energy Direct Install Program (WeDIP) is provided to non-residential, small business customers served by Pasadena Water and Power (PWP). Participating customers obtain water and energy savings through a no cost installation of more efficient equipment.

This report has two key objectives: 1) it is a persistence study that measures the extent to which targeted measures installed under Pasadena Water & Power's (PWP's) Commercial Water & Energy Direct Install Program (WeDIP) during 2013 remain in place and operational; and 2) to determine and improve the efficacy of such programs.

The ex-post analysis was conducted from November 2014 to January 2015, and focuses on projects completed from February to October 2013. For purposes of this report, the ex-ante analysis will be described as 2013, while the ex-post analysis will be described as 2014.

The overall objective of the persistence evaluation contained within this report is to quantify the 2014 ex-post energy savings, 2014 ex-post demand reduction and persistence rate of the 2013 Program. The 2014 ex-post energy savings represents the total annual kWh reduction still in place two years after participation in the 2013 program, while the ex-post demand reduction represents the average kW demand reduction between 2:00 pm and 5:00 pm during a three-day heat storm that includes the highest annual temperature. The persistency rate is defined as the 2014 ex-post energy savings as a percentage of the 2013 WeDIP ex-ante savings.

Table 1-1 summarizes the persistence findings detailed within the report. Data used in the table were collected through measurements, on-site inspections, and customer interviews.

Measure Type	No. of Sites	2013 Ex-Ante kWh	2013 Ex-Ante kW	2014 Ex-Post kWh	2014 Ex-Post kW	Persistence Rate
Lighting & HVAC	225	1,138,643	312	980,442	237	86%
Refrigeration	123	1,252,301	140	1,228,914	139	98%
Total		**2,390,944**	**452**	**2,209,357**	**377**	

Table 1 Program Energy Savings Summary

The overall objective of the market study evaluation contained within this report is to assess the potential for a continued direct install program, and then specifically look at the potential for individual measures. This market potential study was performed through surveys with customers that implemented the program measures, along with past participants and pre-installation and post-installation inspections.

1.1 INTRODUCTION

PWP contracted AESC to evaluate their 2013 Direct Install Program with two key objectives: 1) measure and verify the persistence of kWh and kW savings attributed to the program; and 2) perform a market potential study.

1.2 DESCRIPTION OF PROGRAM

The Water and Energy Direct Install Program is a utility driven direct install program that primarily served the small business commercial market. In this program, the utility marketed to customers directly to offer installation of specified energy efficiency measures, based on a no cost pre-installation energy survey.

This initiative sought to obtain immediate peak load reduction and energy savings in the small business commercial sector through the installation of energy efficient measures. The incentive for this initiative covered the entire installation cost associated with energy efficient measures. The eligible measures include:

Measure	Cost Unit	Price/Cost Unit	kWh Savings	kW Savings
Energy Efficient Lighting	Lamp	$0.25-$0.35/kWh	Varies	Varies
LED Exit & Open/Close Sign	Fixture	$0.25-$0.35/kWh	Varies	Varies
Setback Programmable Thermostat	Thermostat	$141.07	564.29	-
High Efficiency Urinal and Toilet	Fixture	$200-$700	-	-
Door Gasket	Linear Feet	$10.34	49	0.011
Auto Door Closer, walk-in cooler	Closer	$206.46	905	0.145
Auto Door Closer, walk-in freezer	Closer	$206.46	2,197	0.285
Auto Door Closer, reach-in cooler	Closer	$156.92	406	0.079
Strip Curtain, walk-in	Square Feet	$12.76	167	0.031
EC Motor	Motor	$247.20-$665.65	Varies	0.044
ECM Motor Controller	Controller	$1,230.30	Varies	0.073
ASH Controller	Door	$202.77-$315.99	1,005	0.018
LED Case Lighting	Fixture	$416.90	Varies	0.102
Vending Miser	Controller	$236.31	1,612	-
Merchandising Cooler	Controller	$236.31	1,086	-

Table 2 List of eligible measures and associated cost and savings

During the course of the program, the following offered measures were not completed: Auto Door Closer (reach-in freezer) and Strip Curtain (warehouse).

1.3 Overview of Approach

This persistence study is based on the initial program ex-ante savings in 2013. Verification of measure persistence was achieved through on-site inspection counts, and measurement of operating hours, which were cross-checked against the application documentation. The inspections were conducted on a sample of 45 site inspections to achieve a confidence level of 90%. The sample created in this effort was inclusive of all completed measures in an effort to accurately depict program efficacy.

Section 2 Persistence Study

2.1 ASSUMPTIONS

During the course of ex-ante verification, two assumptions were corrected for this report. They were:

- Contractors assumed "open to the public" hours reflected the lighting "usage" hours, when in fact the actual usage varied by space type at many of the observed locations.
- The lighting energy and demand savings were calculated based solely on the system input wattage and neglected to account for interactive effects and coincident diversity.

The following ex-ante assumptions made in the *2013* Program were deemed reasonable, and thus were maintained in this persistence study:

- Condition and usage of existing equipment that was replaced under the scope of this program.
- The energy and demand savings associated with the various HVAC and refrigeration measures. The sources for these savings have been documented and verified as part of this report. Please reference Appendix B for a complete list of sources.

2.2 DATA COLLECTION AND PREPARATION

This persistence study was based on several different data sources including: provided program documentation, on-site data collection, and customer interviews during ex-post inspections. The methodology for collection of the data is detailed in this section of the report.

2.2.1 Provided Program Documentation and Develop Ex-Ante Savings

To understand the initial estimates of the 2013 ex-ante kWh savings and kW demand reduction, AESC reviewed the program documentation provided by PWP. This documentation included, but was not limited to, the initial vendor completed worksheets for each site, installation notes, and program participation documentation.

This documentation was used to quantify the number and type of measures on a per-site and overall program basis. Extracted information was used to clarify assumptions made in the application and installation calculations and develop ex-ante savings. The documentation was also

used to make assumptions regarding anticipated results of the data collection for the purpose of developing an appropriate sampling basis.

2.2.2 Data Collection and Site Sampling

To estimate the net 2014 ex-post savings being achieved from the 2013 Program it was initially estimated by AESC to sample 56 sites, inclusive of all completed program measures. This estimated sample size was calculated based on a 90% confidence with a coefficient of variance of 0.5. The sample sites were chosen at random from the total population. As our goal confidence of 90% is an observed interval (i.e. it is calculated from the observations) the site observations were continually tracked to calculate the number of site verifications that would satisfy the needs of this study based on the actual results. The final number of sites sampled was 45, which is above the calculated 40 needed for the confidence interval and accounted for a total of 17% of the 2013 ex-ante energy savings.

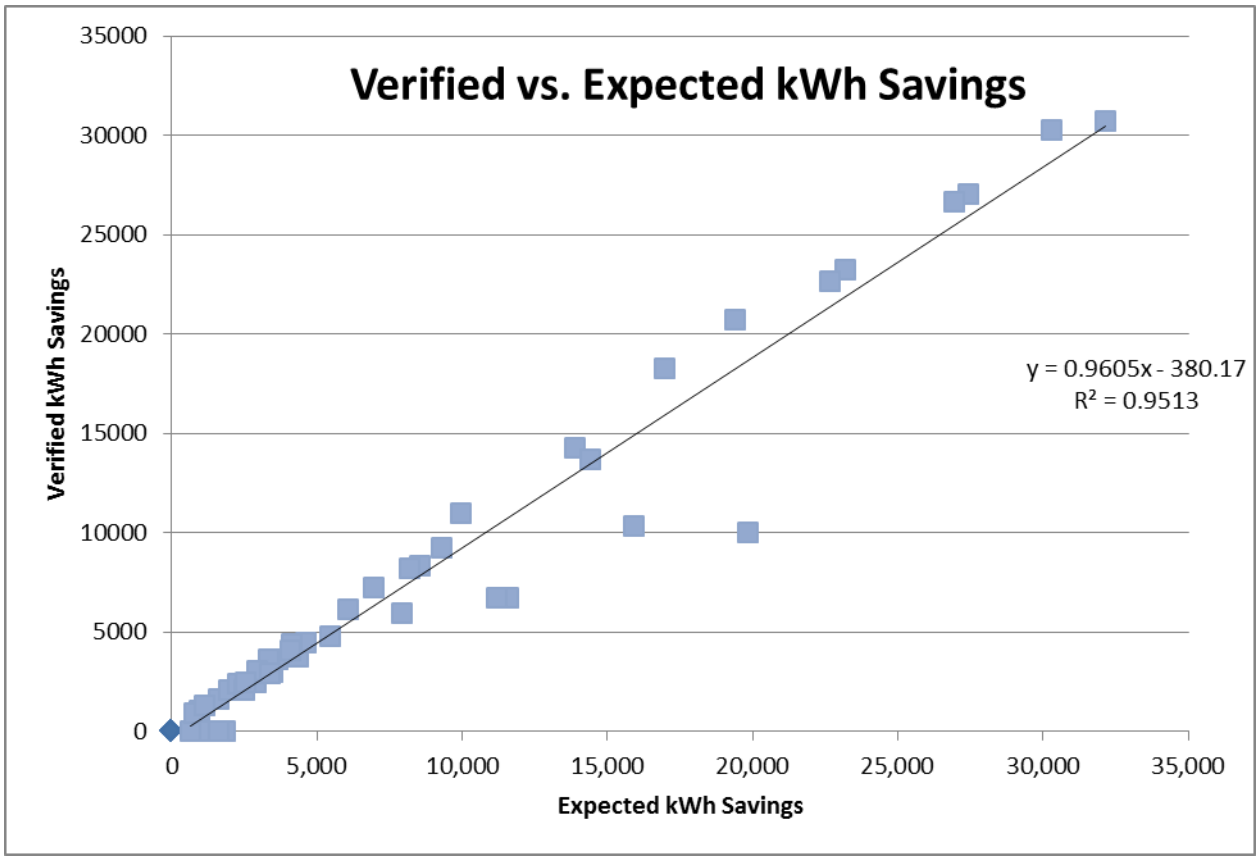

Figure 1 Expected kWh Savings vs. Verified kWh Savings

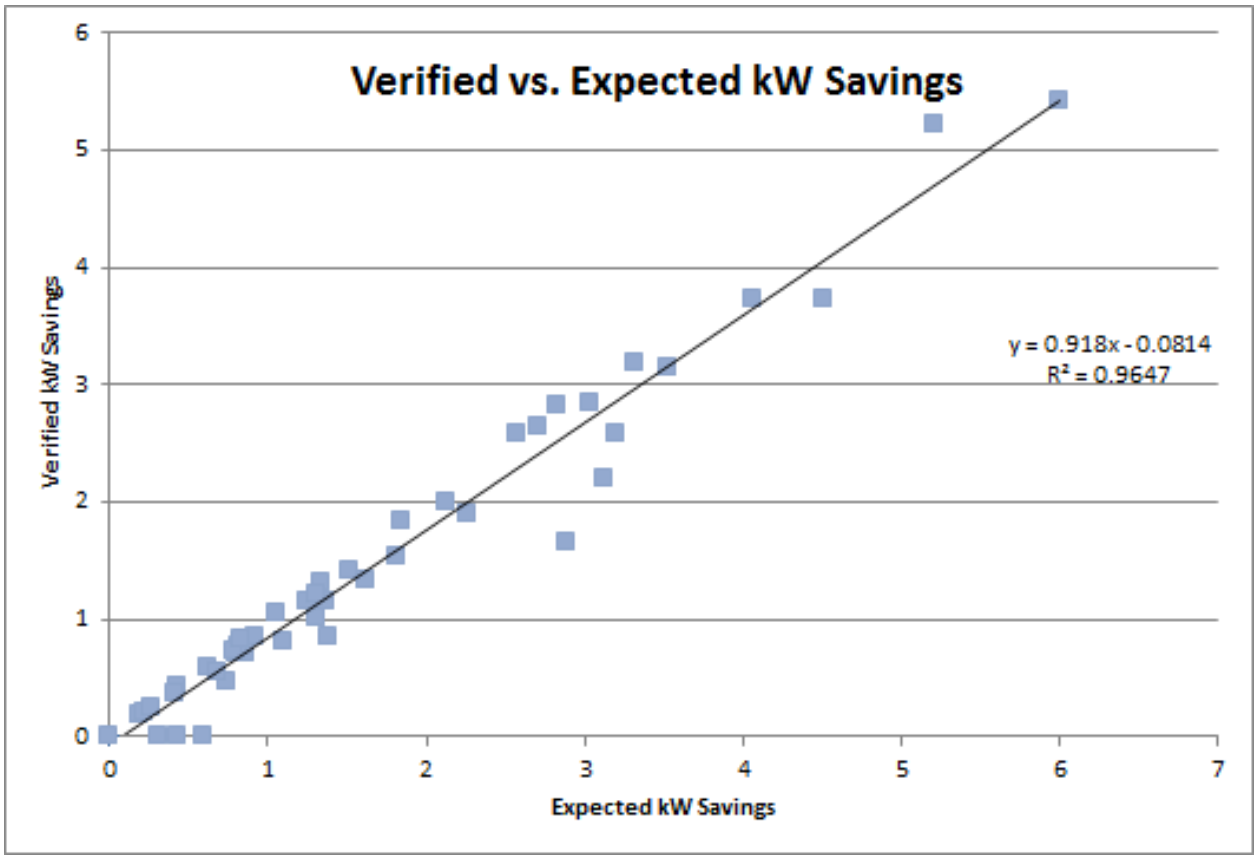

Figure 2 Expected kW Savings vs. Verified kW Savings

2.3 GROSS SAVINGS ESTIMATION

The 2014 ex-post savings, as quantified by AESC, represent the energy savings that persisted up to two years after the installation of energy efficient measures by participants in the 2013 WeDIP program. Analysis of the collected data, measured results and stipulated assumptions are used to estimate the energy savings of each measure for each site. AESC used Microsoft Excel to model the savings for each facility by measure type. Analysis of the energy savings is based on the following three factors: (1) stipulated wattage saved (watts before – watts after) from retrofit, (2) hours of operation, (3) number of units retrofit.

Each measure was inspected to verify submitted measure product, hours of operation, quantity, and condition. The hours of operation was collected at each of the 45 sites visited. Approved hours were adjusted by confirming operating hours with the customer and logging any changes. Quantity and condition of items replaced/retrofit was also collected as part of the site verification process.

The general formulas for calculating the annual energy savings are noted below:

Lighting Measures:

- Annual Energy Savings = $(kWh_{pre} - kWh_{post})$*Building Interactive Effects[1]
    - Annual kWh = Operating hours * kW reduction* quantity

HVAC & Refrigeration Measures:

- EC Motors Annual Energy Savings = $kWh_{pre} - kWh_{post}$
    - kWh = (Motor Amps * Voltage * Power Factor * 8,760) / 1000 for single phase
    - kWh = (SQRT(3) * Motor Amps * Voltage * Power Factor * 8,760) / 1000 for three phase
- EC Motor Controller Annual Energy Savings = $kWh_{pre} - kWh_{post}$
    - Uncontrolled kWh = 1,587.705 (Frigitek proprietary measurement) * Quantity
- All Other Measures Annual Energy Savings = Quantity * Verified Savings per Unit

The 2014 ex-post demand reduction was calculated in a similar fashion. The on-peak reduction was attributed only to sites and measures that experienced operating during the timeframe between 2:00 pm and 5:00 pm during a three-day heat storm that includes the highest annual temperature. The general equations for calculating peak demand reduction are as follows:

Lighting Measures:

- Demand Savings = $(kW_{pre} - kW_{post})$*Building Interactive Effects * Coincident Demand Factor[2]
    - kW = Input Wattage * Quantity / 1000

HVAC & Refrigeration Measures

- Demand Savings = Quantity * Verified Savings per Unit

On-site data collection only tells the story of what was installed and gives no information about baseline lighting equipment or operating hours. It was assumed that the baseline operating hours are the same as the retrofit operating hours. Additionally because no baseline equipment

[1] Interactive effects accounts for energy efficiency lighting measures reducing the internal heat gain of air-conditioned spaces. This reduction in heat gain reduces the cooling energy consumption and increases heating energy consumption.

[2] Coincident demand factor (CDF) represents the likelihood that the lighting system is drawing full load throughout the peak demand period.

information could be collected during AESC's inspection the measure must be inferred from the Vendor supplied worksheets.

2.3.1 Verified Measure Equipment

During our preliminary data collection post-installation visits, the inspector verified the quantity and type of efficiency retrofits. This verification was completed at 45 sample sites of the 337 site population of total program sites. Table 3 illustrates the quantity of each lighting and HVAC measure type verified for each of the sites. Table 4 illustrates the quantity of each refrigeration measure type verified for each of the sites. The baseline equipment type was inferred from the PWP vendor worksheets and Installation reports as AESC was not able to document baseline equipment. Although these findings contribute to the lower than expected verified equipment, other factors contributed to these results. Such as, facilities that are no longer in business result in zero verified pieces of equipment (2 of the 45 inspected sites). In other cases the inspector could not document as many pieces of equipment having been retrofit to the specified equipment as documented in the installation report.

Measure Type	Ex-Ante Quantity	Ex-Post Quantity	Ex-Ante kWh Savings	Ex-Post kWh Savings
Linear Fluorescent (T12 & T8)	562	523	129,811	120,058
Compact Fluorescent (CFL)	166	149	36,561	27,984
LED (Lamp only)	169	157	37,429	26,191
Linear Fluorescent De-Lamping	6	6	2,286	2,359
Programmable Thermostats	11	11	6,207	6,207
Totals	**914**	**846**	**212,294**	**182,799**

Table 3 Lighting and HVAC verified findings by measure type

Measure Type	Ex-Ante Quantity	Ex-Post Quantity	Ex-Ante kWh Savings	Ex-Post kWh Savings
Door Gasket	821.02 (ft)	821.02 (ft)	40,230	40,230
Auto Door Closer, walk-in cooler	4	4	3,620	3,620
Auto Door Closer, walk-in freezer	1	1	2,197	2,197
Auto Door Closer, reach-in cooler	16	16	6,496	6,496
Strip Curtain, walk-in	164.52 (ft)	164.52 (ft)	27,475	27,475
EC Motor	58	55	53,717	51,722
ECM Motor Controller	15	15	20,763	20,763
ASH Controller	25	25	25,125	25,125
LED Case Lighting	24	24	8,635	8,635
Vending Miser	1	0	1,612	0
Merchandising Cooler	3	3	3,258	3,258
Totals	**1,132.54**	**1,128.54**	**193,129**	**189,522**

Table 4 Refrigeration verified findings by measure type

2.3.2 Verified Operating Hours

Operating hours of each facility were verified by on-site personnel and confirmed with the 2013 Installation reports operating hours of the facility. Table 5 represents the average operating hours of the 45 inspected sites as compared to the results from the same 45 sites in the 2013 Installation reports. The table is divided into both lighting/ HVAC and refrigeration measures and demonstrates the annual operating hours and the expected operating hours during peak demand periods.

Title 24 Building Type	Ex-Ante Operational Hours	Ex-Post Operational Hours	% Difference
Grocery	5,359	4,762	-11%
Health/Medical - Clinic	2,281	2,065	-9%
Misc - Commercial	3,464	2,691	-22%
Restaurant - Fast-Food	6,266	4,251	-32%
Restaurant - Sit-Down	3,272	3,239	-1%
Retail - Single-Story Large	2,998	2,692	-10%
Retail - Small	3,208	2,144	-33%
Storage - Unconditioned	3,545	2,329	-34%

Table 5 Operational hours comparison organized by Title 24 Building Type

The ex-ante calculations assumed "open to the public" hours reflected the lighting "usage" hours, when in fact the actual usage varied by space type at many of the observed locations. Spaces that were observed to operate on schedules independent of the site schedule were subject to runtime adjustments using DEER factors.

2.3.3 Wattage and Measurements

Power measurements were not taken as part of this evaluation study. Fixture wattages and measure savings were stipulated based on the installation reports.

2.4 Ex-Post Savings Calculation

The net 2014 ex-post energy savings estimates for the 2013 WeDIP Program were calculated separately for the two categories of measure types. Ultimately the desired confidence of 90% was obtained by inspecting a total of 45 sites with a calculated margin of error of 2 sites. Statistical analysis was performed on only 43 of the sites since 2 of the sites are no longer in business. However, the closed sites still impact the overall savings calculation and have a slight impact on the program. It is not reasonable to include these 2 sites in the sample for calculating the statistical

confidence as they provide no savings[3]. The remaining 43 sites provide the desired confidence level to reasonably assess the persistency of the program energy savings in 2014. Persistency rates were calculated based on the overall differential in energy savings between the 2013 ex-ante and 2014 ex-post values and is applied to the overall population of projects which participated in the program.

The persistency rate is calculated from the 2014 ex-post savings divided by the 2013 ex-ante savings. The 2014 ex-post savings was calculated by either directly multiplying measured hours of the facility by the energy reduction of the equipment, by multiplying the energy reduction by the adjusted operating hours as explained in section 2.3, or by multiplying the quantity of installed equipment by the verified reduction factors.

Table 6 represents the ex-post calculated savings for the 45 sites in which data was collected. It should be noted that select sites contained a combination of lighting, HVAC and refrigeration measures.

Measure Type	No. of Sites	2013 Ex-Ante kWh Savings	2013 Ex-Ante kW Savings	2014 Ex-Post kWh Savings	2014 Ex-Post kW Savings	Persistence Rate
Lighting & HVAC	41	212,294	55.2	182,798	42.0	86%
Refrigeration	13	193,129	22.8	189,522	22.7	98%
Total		**405,423**	**78.0**	**372,320**	**64.7**	**92%**

Table 6 Calculated savings for verified sites.

Table 7 shows the projected impact on the 2013 program year by applying the persistency rates from table 6 to the overall program 2013 ex-ante savings.

[3] Deleting the closed sites from the statistical sample, but keeping them for the overall program persistence has been used, as approach, in many other Utilities evaluation studies.

Measure Type	No. of Sites	2013 Ex-Ante kWh	2013 Ex-Ante kW	2014 Ex-Post kWh	2014 Ex-Post kW	Persistence Rate
Lighting & HVAC	225	1,138,643	312	980,442	237	86%
Refrigeration	123	1,252,301	140	1,228,914	139	98%
Total		**2,390,944**	**452**	**2,209,357**	**377**	**92%**

Table 7 Project impact on the 2013 program year.

2.5 CONCLUSIONS

Based on AESC's evaluation of PWP's 2013 WeDIP Program it was found that the overall persistency rate for annual energy reduction (kWh) is 92% and the peak demand (kW) persistency rate is 83%. There are three main factors which account for the reduced overall program persistence rates including: (1) lower equipment counts, (2) lower operating hours, and (3) inclusion of lighting interactive and coincident diversity factors. Interactive effects account for energy efficiency lighting measures reducing the internal heat gain of air-conditioned spaces. This reduction in heat gain reduces the cooling energy consumption and increases heating energy consumption. The coincident demand factor (CDF) represents the likelihood that the lighting system is drawing full load throughout the peak demand period.

Lower equipment counts are attributed to several factors. Of the verified sites, 2 of the 45 are no longer in business and therefore reduce the total measure which can be attributed to the 2014 ex-post savings. At several of the other locations a lower measure equipment count was observed than the expected measure equipment count as described in the 2013 installation reports. In addition, 6 of the 45 sites visited had less than 80% of the expected number of measured equipment. It was also observed at select locations that some of the installed fluorescent lamps and overhead lighting were removed and replaced with less efficient equipment.

Customer interviews and available schedules were used to determine the operating profile of the 45 sites visited. The differences in operating hours arises from the ex-ante calculations assumption of “open to the public” hours reflecting the lighting “usage” hours, when in fact the actual usage varied by space type at many of the observed locations. Spaces that were observed to operate on schedules independent of the site schedule were subject to runtime adjustments using DEER factors.

The total program persistence rate from the data collected ex-ante in 2013 and ex-post in 2014 is 92%; that means there has been a degradation of approximately 8% in 1 year. Many degradation studies show that usually the degradation of equipment is not linear but exponential. AESC did not have any intermediate information to calculate a degradation exponent and therefore suggests the program managers to use the degradation rate of 8%.

APPENDIX A

FIELD DATA SUMMARY PYRAMIDS

OVERALL SUMMARY

Lighting & HVAC Measures					
	Verified Sites			Total	
	Quantity	kWh	kW	kWh	kW
Ex-Ante	903	212,294	55.2	1,138,643	311.9
Ex-Post	835	182,798	42.0	980,442	237.3
Persistence %	92%	86%	76%	86%	76%

Total Program			Ex-Post Verified		
	kWh	kW		kWh	kW
Ex-Ante	2,390,944	452	Ex-Ante	405,423	78.0
Ex-Post	2,209,357	377	Ex-Post	372,320	64.7
Persistence %	92%	83%	Persistence %	92%	83%

Refrigeration Measures				
	Verified Sites		Total	
	kWh	kW	kWh	kW
Ex-Ante	193,129	22.8	1,252,301	140.2
Ex-Post	189,522	22.7	1,228,914	139.4
Persistence %	98%	99%	98%	99%

LIGHTING AND HVAC MEASURES

Lighting & HVAC Measures					
	Verified Sites			Total	
	Quantity	kWh	kW	kWh	kW
Ex-Ante	903	212,294	55.2	1,138,643	311.9
Ex-Post	835	182,798	42.0	980,442	237.3
Persistence %	92%	86%	76%	86%	76%

T12 to T8			
	Quantity	kWh	kW
Ex-Ante	562	129,810	40.77
Ex-Post	523	120,058	31.19
Persistence %	93%	92%	77%

CFL			
	Quantity	kWh	kW
Ex-Ante	166	36,561	10.14
Ex-Post	149	27,984	6.87
Persistence %	90%	77%	68%

LED			
	Quantity	kWh	kW
Ex-Ante	169	37,429	3.87
Ex-Post	157	26,191	3.53
Persistence %	93%	70%	91%

T8 De-Lamping			
	Quantity	kWh	kW
Ex-Ante	6	2,286	0.43
Ex-Post	6	2,359	0.42
Persistence %	100%	103%	97%

Programmable Thermostats			
	Quantity	kWh	kW
Ex-Ante	11	6,207	-
Ex-Post	11	6,207	-
Persistence %	100%	100%	

Refrigeration Measures

Refrigeration Measures				
	Verified Sites		Total	
	kWh	kW	kWh	kW
Ex-Ante	193,129	22.8	1,252,301	140.2
Ex-Post	189,522	22.7	1,228,914	139.4
Persistence %	98%	99%	98%	99%

Door Gasket			
	Linear Feet	kWh	kW
Ex-Ante	821	40,230	9.0
Ex-Post	821	40,230	9.0
Persistence %	100%	100%	100%

Auto Door Closers			
	Quantity	kWh	kW
Ex-Ante	21	12,313	2.1
Ex-Post	21	12,313	2.1
Persistence %	100%	100%	100%

ASH Controller			
	Quantity	kWh	kW
Ex-Ante	25	25,125	0.5
Ex-Post	25	25,125	0.5
Persistence %	100%	100%	100%

LED Case Lighting			
	Quantity	kWh	kW
Ex-Ante	24	8,635	2.4
Ex-Post	24	8,635	2.4
Persistence %	100%	100%	100%

Vending Miser			
	Quantity	kWh	kW
Ex-Ante	1	1,612	-
Ex-Post	0	-	-
Persistence %	0%	0%	

Strip Curtains			
	Square Feet	kWh	kW
Ex-Ante	164.52	27,475	5.1
Ex-Post	164.52	27,475	5.1
Persistence %	100%	100%	100%

Merchandising Cooler			
	Quantity	kWh	kW
Ex-Ante	3	3,258	-
Ex-Post	3	3,258	-
Persistence %	100%	100%	

ECMs			
	Quantity	kWh	kW
Ex-Ante	73	74,480	3.6
Ex-Post	70	72,486	3.5
Persistence %	96%	97%	96%

Auto Door Closer, walk-in cooler			
	Quantity	kWh	kW
Ex-Ante	4	3,620	0.6
Ex-Post	4	3,620	0.6
Persistence %	100%	100%	100%

Auto Door Closer, walk-in freezer			
	Quantity	kWh	kW
Ex-Ante	1	2,197	0.3
Ex-Post	1	2,197	0.3
Persistence %	100%	100%	100%

Auto Door Closer, reach-in cooler			
	Quantity	kWh	kW
Ex-Ante	16	6,496	1.3
Ex-Post	16	6,496	1.3
Persistence %	100%	100%	100%

Auto Door Closer, reach-in freezer			
	Quantity	kWh	kW
Ex-Ante	0	-	-
Ex-Post	0	-	-
Persistence %			

Measure not completed.

Strip Curtain, walk-in			
	Square Feet	kWh	kW
Ex-Ante	164.52	27,475	5.1
Ex-Post	164.52	27,475	5.1
Persistence %	100%	100%	100%

Strip Curtain, warehouse			
	Square Feet	kWh	kW
Ex-Ante	0	-	-
Ex-Post	0	-	-
Persistence %			

Measure not completed.

EC Motor			
	Quantity	kWh	kW
Ex-Ante	58	53,717	2.6
Ex-Post	55	51,722	2.4
Persistence %	95%	96%	

ECM Motor Controller			
	Quantity	kWh	kW
Ex-Ante	15	20,763	1.1
Ex-Post	15	20,763	1.1
Persistence %	100%	100%	100%

APPENDIX B

ENERGY SAVINGS SOURCES

REFRIGERATION MEASURES

Proposed KYC Savings				
Measure Description	Unit Type	Annual kWh Savings	Demand/Peak kW Savings per Unit	KYC Source/s
ASH Controller, coolers or freezers	Door	1004.72	0.018	PGECOREF108 R1 Anti-Sweat Heater Controls.doc
Auto Door Closer: Reach-In, coolers	Closer	406.00	0.079	PGECOREF110 R1 Auto-Closers Main Doors.doc; PGECOREF113 R1 Auto Closers for Reach in Cooler or Freezer Doors.doc; Refrigeration WP_2006_113005.xls
Auto Door Closer: Reach-In, freezers	Closer	1211.00	0.235	
Auto Door Closer: Walk-In, coolers	Closer	905.11	0.145	
Auto Door Closer: Walk-In, freezers	Closer	2197.24	0.285	
Door Gasket	Linear Feet	49.00	0.011	refrigerated gaskets_POU workpaper_v3.xlsx
ECM Controller [wghtd avg of # motors controlled]	Controller	2779.63	0.438	CUSTOM CALCULATION (PROJECT-SPECIFIC): ECMotor Analysis 11-03-09.xls; Calculations and Factors Explanation - ECM.pdf; New ECMotor Analysis Sheet Comments.pdf; Frigitek-Dec08.pdf
LED Case Light	Fixture	780.00	0.102	CUSTOM CALCULATION (PROJECT-SPECIFIC): Eugene Freezer Case G-Way Rpt 18873 final.doc; LED_Freezer_Case_Lighting_(Final).pdf; ESJ-WP-LED Case Ltg w MS-100924-1808.doc
Merchandising Cooler Controller	Controller	1086.00	0.000	2005 DEER
Programmable EC Motor [wghtd avg of motor types]	Motor	1240.86	0.044	CUSTOM CALCULATION (PROJECT-SPECIFIC): ECM Energy Monitoring 2006 Report by Food Service Technology Center.pdf
Strip Curtain, walk-in	Square Feet	167.00	0.031	Strip Curtains PGECOREF103 R1 execsum.xls; Strip Curtains PGECOREF103 R1.doc; Strip Curtains PGECOREF103 R1 references.pdf
Strip Curtain, walk-in	Square Feet	1472.00	0.285	
Vending Machine Controller	Controller	1612.00	0.000	2005 DEER

DEER REDUCTION VALUES

Space Type	% Savings	Runtime %
Assembly	45%	55%
Break Room	25%	75%
Classroom	30%	70%
Computer Room	35%	65%
Conference	35%	65%
Dining	35%	65%
Gymnasium	35%	65%
Hallway	25%	75%
Hospital Room	45%	55%
Industrial	45%	55%
Kitchen	30%	70%
Library	15%	85%
Lobby	25%	75%
Lodging (Guest Rooms)	45%	55%
Open Office	15%	85%
Private Office	30%	70%
Process	45%	55%
Public Assembly	35%	65%
Restroom	45%	55%
Retail	15%	85%
Stair	25%	75%
Storage	45%	55%
Technical Area	35%	65%
Warehouses	45%	55%
Other	15%	85%
Parking Garage	15%	85%