M-2009-2112956

Quarterly Report to the Pennsylvania Public Utility Commission and Act 129 Statewide Evaluator

For the period
December 1, 2011 to February 29, 2012
Program Year 3

For Act 129 of 2008
Energy Efficiency and Conservation Program
of Pennsylvania Power Company

Prepared by the Pennsylvania Power Company
April 16, 2012

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Abbreviations (see Glossary for definitions)

CPITD	Cumulative Program/Portfolio Inception to Date
EM&V	Evaluation Measurement and Verification
IQ	Incremental Quarter
kW	Kilowatt
kWh	Kilowatt-hour
M&V	Measurement and Verification
MW	Megawatt
MWh	Megawatt-hour
NTG	Net-to-Gross
PYTD	Program/Portfolio Year to Date
TRC	Total Resource Cost
VEPS	Verified Ex-Post Savings
UEPS	Unverified Ex-Post Savings

1 Overview of Portfolio

Act 129, signed October 15th, 2008, mandated energy savings and demand reduction goals for the largest electric distribution companies (EDC) in Pennsylvania. Pursuant to their goals, energy efficiency and conservation (EE&C) plans were submitted by each EDC and approved by the Pennsylvania Public Utility Commission (PUC).

In accordance with the Secretarial Letter issued on May 25, 2011[1], and the Commission directive requiring EDCs to file quarterly reports for the first three quarters of each reporting year, the Pennsylvania Power Company (Penn Power or Company) respectively submits this quarterly report documenting the progress and effectiveness of the EE&C accomplishments through the end of Program Year 3, Quarter 3.

Compliance goal progress as of the end of the reporting period[2]:

Cumulative Portfolio Energy Impacts

- The CPITD reported gross energy savings is 93,361 MWh [3,4].
- The CPITD preliminary verified energy savings is 90,831 MWh[5].
- Achieved 65% of the 143,188 MWh May 31st, 2013 energy savings compliance target on a gross basis and 63 % on a preliminary verified basis..

Portfolio Demand Reduction[6]

- The CPITD reported gross demand reduction is 9.56 MW[7]
- The CPITD preliminary verified demand reduction is 10.05 MW.

[1] See Docket No. M-2008-2069887

[2] Percentage of compliance target achieved calculated using both Gross and Verified (or Preliminary verified value, if not available) Cumulative Program/Portfolio Inception to Date values divided by compliance target value. Note: While Penn Power's EM&V activities are on target, realization rates are not yet available for all programs. As such, Penn Power is reporting percentage of achieved goals using both gross and preliminary verified values in this report.

[3] For purposes of this report, gross energy savings and demand reduction are considered achieved at the point at which a project is considered complete, having met the following criteria, (1) the Energy Conservation Measure (ECM) has been installed, (2) the ECM is commercially operable and (3) the EDC has accrued a liability for rebate payment or other financial incentives.

[4] The CPITD reported gross impacts are approximately equal to the sum of CPITD impacts from the PY2 annual report and the PYTD reported gross impacts reported herein. Any minor discrepancies are associated with the Company's present transition to reporting directly from the DSM tracking database rather than the previous practice of reporting from program implementers' tracking databases as maintained and validated by ADM, the M&V contractor. In particular, some of the demand reduction impacts of the CFL distribution program component specific to Government/Non-Profit entities were not yet updated in DSM tracking system at the time of report generation. Accordingly, the gross demand reductions reported herein for that program and the portfolio as a whole are understated by 0.6035 MW. The gross verified demand reductions are reported accurately.

[5] The preliminary verified impacts are the sum of verified impacts for PY1 and PY2 and preliminary verified impacts for PY3. As historical realization rates are near 100% for most programs, preliminary realization rates for PY3 are nominally set to 100% until M&V work results in meaningful adjustments.

[6] Demand reduction to include both the demand savings from the installation of energy efficiency measures and the demand reduction associated with demand response programs.

[7] Reference footnotes 3 and 4.

- Achieved 22% of the 44 MW May 31st, 2013 demand reduction compliance target.

Low Income Sector[8]

- There are 50,870 measures offered to the Low-Income Sector, comprising 23% of the total measures offered.
- The CPITD reported gross energy savings for low-income sector programs is 28,082 MWh.
- The CPITD preliminary verified energy savings for low-income sector programs is 27,120 MWh.

Government and Non-Profit Sector

- The CPITD reported gross energy savings for government and non-profit sector programs is 9,595 MWh.
- The CPITD preliminary verified energy savings for government and non-profit sector programs is 8,234 MWh.

Program Year portfolio highlights as of the end of the reporting period[9]**:**

- The PYTD reported gross energy savings is 24,303 MWh.
- The PYTD preliminary verified energy savings is 24,201 MWh.
- The PYTD reported gross demand reduction is 2.86 MW.
- The PYTD preliminary verified demand reduction is 2.82 MW.
- The PYTD reported participation is 83,758 participants.[10]

Program Updates:

Due to positive customer response, approved funding for the **Residential New Construction** program has been fully allocated; therefore, the program was officially closed effective March 7, 2012. Participating builders and energy efficiency raters were notified that applications for rebates not approved by March 7, 2012 are no longer eligible for Phase I program incentives.

The low-income **WARM Plus** program exceeded its EE&C Plan targets through 2013 and due to minimal funds remaining in the budget, the program was closed at the end of January 2012. Any remaining funds budgeted for this program will be used for ongoing EM&V and reporting.

Other Observations and Risks That May Affect Portfolio Success

On February 18, 2011, the Company submitted an expedited petition for approval of certain changes, which the Commission approved on March 17, 2011[11], and also a First Amended EE&C Plan. On January 12, 2012, the Commission approved the Petition of Pennsylvania Power Company, Pennsylvania Electric Company and Pennsylvania Power Company ("the Companies") for modifications to their EE&C Plans.

Immediately following approval, the Companies began implementing the First Amended EE&C Plan changes, which include the consolidation of the following programs: (i) Residential Whole Building

[8] Results reported here are the sum of the impacts of the dedicated low-income programs and the impacts of low-income customers' participation in the general residential programs.

[9] Realization rates for most programs are pending upon completion of primary data collection and analysis. They are nominally set at 100% based on tracking data review and historical results from PY1 and PY2.

[10] CFL participants comprise 71,636 of the listed participant numbers. CFL participants are defined by the number of CFL packages purchased through Penn Power's Energy Efficient Products Program and as one customer per four CFLs distributed in giveaway events.

[11] *See* Opinion and Order, Docket No. M-2009-2092222, et al.

Comprehensive with the Home Energy Audit program; (ii) C/I Small Sector Energy Audit and Technical Assessment with the C/I Small Sector Equipment program[12]; (iii) C/I Large Sector Industrial Motors and Variable Speed Drives with the C/I Large Sector Performance Contracting/Equipment program

As such, for purposes of this and all subsequent reports, savings and financial data are being combined retroactively.

Also, given the dynamic nature of the economy and customer participation rates, there is a clear need for implementation flexibility and prompt approval of plan changes to ensure achievement of savings. Prompt approval minimizes the potential of having funds that could be applied to successful programs stranded on unsuccessful programs.

Additionally, given the current economic conditions and their impact on government and institutional budgets, achieving 10% of Act 129 target savings from Federal/State/local/municipal governments, school districts, institutions of higher education, and nonprofit entities may prove challenging.

Furthermore, the Company has growing concerns about the ability to achieve the 4½ percent demand reduction target based on the magnitude of the MW, (working through CSPs) its ability to enroll enough customers willing to curtail load for approximately 20 days specific to the top 100 hours, its ability to accurately forecast when the top 100 hours will occur and the budget constraints.

Notwithstanding these difficulties, the Company is diligently working with its implementation and evaluation CSPs to evaluate current programs and identify the most effective and economic approach for achieving Act 129 targets. The empirically-based results from these evaluations form the basis for program design decisions with a goal to cost effectively improve the delivery of energy efficiency and conservation measures to customers.

1.1 Summary of Portfolio Impacts

A summary of the portfolio reported impacts is presented in the following table:

Table 1-1: EDC Reported Portfolio Impacts through the End of the Reporting Period

Impact Type	Total Energy Savings (MWh)	Total Demand Reduction (MW)
Reported Gross Impact: Incremental Quarterly	8,217	0.83
Reported Gross Impact: Program Year to Date	24,303	2.86
Reported Gross Impact: Cumulative Portfolio Inception to Date	93,361	9.56
Unverified Ex-Post Savings	0	0.00
Estimated Impact: Projects in Progress	8,428	1.36
Estimated Impact: PYTD Total Committed	32,731	4.22
Preliminary PYTD Verified Impact[a]	24,201	2.82
Preliminary PYTD Net Impact[b]	24,201	2.82
NOTES:		

[12] For reporting purposes, savings and finances were shown combined for the C/I Small Sector Energy Audit and Technical Assessment and C/I Small Sector Equipment programs since inception.

[a] Portfolio Verified Impact calculated by aggregating Program PYTD Verified Impacts. Program PYTD Verified Impacts are calculated by multiplying Program PYTD Reported Gross Impacts by program realization rates.

[b] Portfolio Net Impact calculated by aggregating Program Net Impacts. Program Net Impacts are calculated by multiplying Program PYTD Verified Impacts by program Net-to-Gross ratios.

A summary of total evaluation adjusted impacts for the portfolio is presented in the following table[13]:

Table 1-2: Verified Preliminary Portfolio Total Evaluation Adjusted Impacts through the End of the Reporting Period

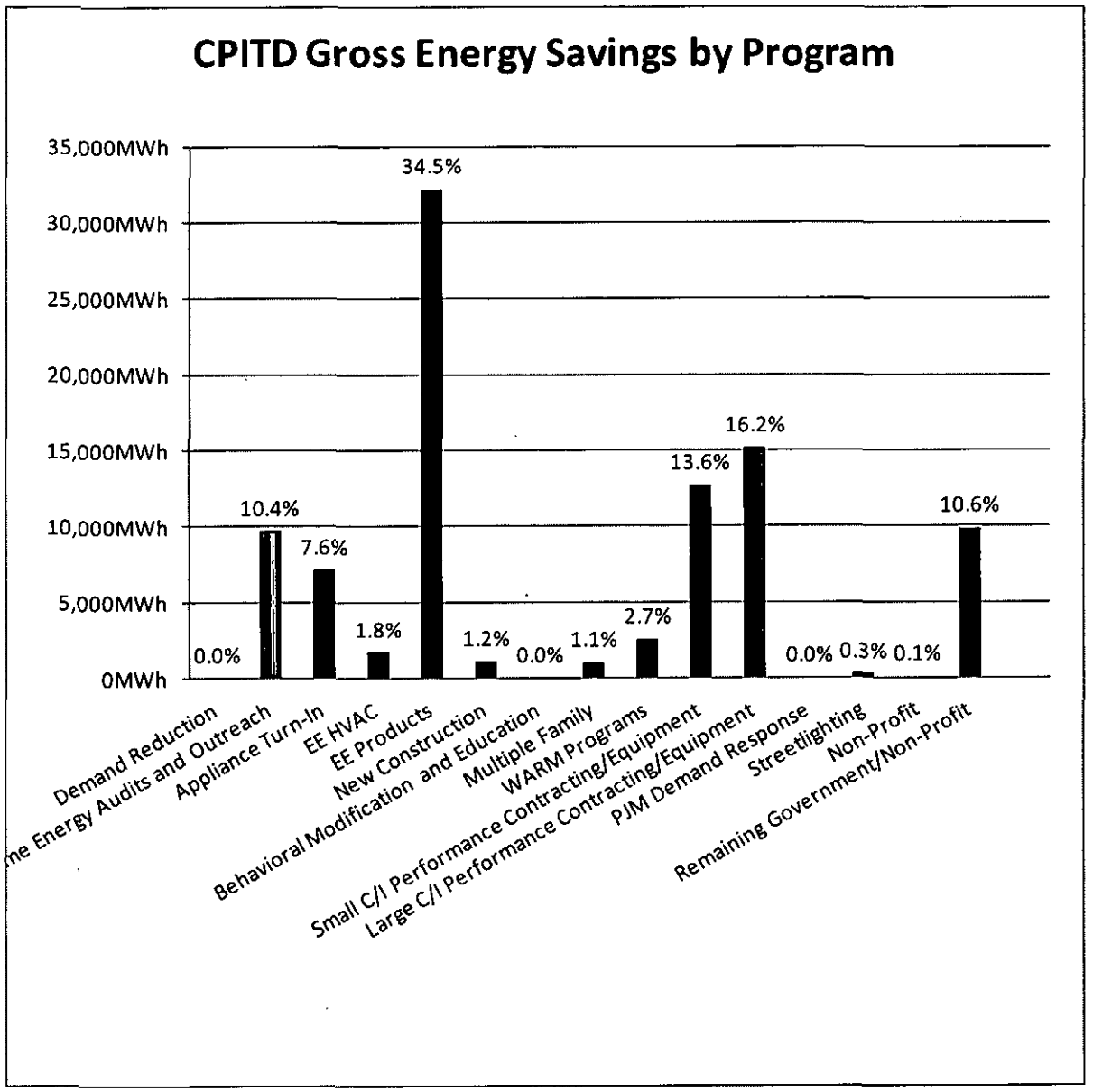
TRC Category	IQ[a]	PYTD[b]	CPITD
TRC Benefits ($)	N/A	N/A	N/A
TRC Costs ($)	N/A	N/A	N/A
TRC Benefit-Cost Ratio			N/A
NOTES: [a] Based on reported gross savings. [b] Based on reported gross savings.			

[13] Consistent with prior guidance from PUC Staff, this Report will not include information related to TRC Benefit-to-Cost Ratios.

1.2 Summary of Energy Impacts by Program

A summary of the reported energy savings by program is presented in the following figure:

Figure 1-1: CPITD Reported Gross Energy Savings by Program through the End of the Reporting Period



A summary of energy impacts by program through the end of the reporting period is presented in the following tables:

Table 1-3: EDC Reported Participation and Gross Energy Savings by Program through the End of the Reporting Period

Program	Participants			Reported Gross Impact (MWh)		
	IQ	PYTD	CPITD	IQ	PYTD	CPITD
Demand Reduction	21	2,742	2,742	0	0	0
Home Energy Audits and Outreach	1,577	3,803	17,886	993	2,393	9,688
Appliance Turn-In	431	1,656	3,895	779	2,991	7,117
EE HVAC	184	1,809	2,400	199	939	1,682
EE Products	26,688	75,674	181,253	4,834	13,238	32,194
New Construction	75	237	362	273	823	1,085
Behavioral Modification and Education	0	0	0	0	0	0
Multiple Family	0	0	3,464	0	0	1,010
WARM Programs	141	506	4,873	84	355	2,548
Small C/I Performance Contracting/Equipment	13	31	184	611	2,190	12,686
Large C/I Performance Contracting/Equipment	1	6	46	8	624	15,135
PJM Demand Response	0	0	0	0	0	0
Streetlighting	0	0	127	0	0	247
Non-Profit	0	0	4	0	0	90
Remaining Government/Non-Profit	5	15	65	436	750	9,879
TOTAL PORTFOLIO	29,136	86,479	217,301	8,217	24,303	93,361

NOTES:
(a) Participation in the EE Products Program attributable to CFL Participation is 25,835 for IQ, 71,636 for PYTD, and 175,699 CPITD periods

Table 1-4: EDC Reported Gross Energy Savings by Program through the End of the Reporting Period

Program	Unverified Ex Post Savings (MWh)	Projects In Progress (MWh)	PYTD Total Committed (MWh)	EE&C Plan Estimate for Program Year (MWh)	Percent of Estimate Committed (%)
Demand Reduction	0	0	0	39	0%
Home Energy Audits and Outreach	0	1	2,394	5,303	45%
Appliance Turn-In	0	96	3,088	4,620	67%
EE HVAC	0	20	959	1,080	89%
EE Products	0	149	13,387	12,270	109%
New Construction	0	2	825	498	166%
Behavioral Modification and Education	0	0	0	1,880	0%
Multiple Family	0	0	0	217	0%
WARM Programs	0	6	360	570	63%
Small C/I Performance Contracting/Equipment	0	4,406	6,596	12,407	53%
Large C/I Performance Contracting/Equipment	0	2,174	2,799	12,490	22%
PJM Demand Response	0	0	0	0	n/a
Streetlighting	0	0	0	189	0%
Non-Profit	0	0	0	69	0%
Remaining Government/Non-Profit	0	1,574	2,324	8,973	26%
TOTAL PORTFOLIO	*0*	*8,428*	32,731	*60,604*	54%

NOTES:
"Unverified Ex Post Savings" are unverified savings pending approval of a TRM or Custom Measure Protocol by the Commission. Note: The Home Energy Audit savings are shifted from unverified to verified because they are based on "interim TRMs" that are now assumed to be approved because they appear in the draft PY3 TRM.

A summary of evaluation verified energy impacts by program is presented in the following table:

Table 1-5: Preliminary Energy Savings by Program through the End of the Reporting Period

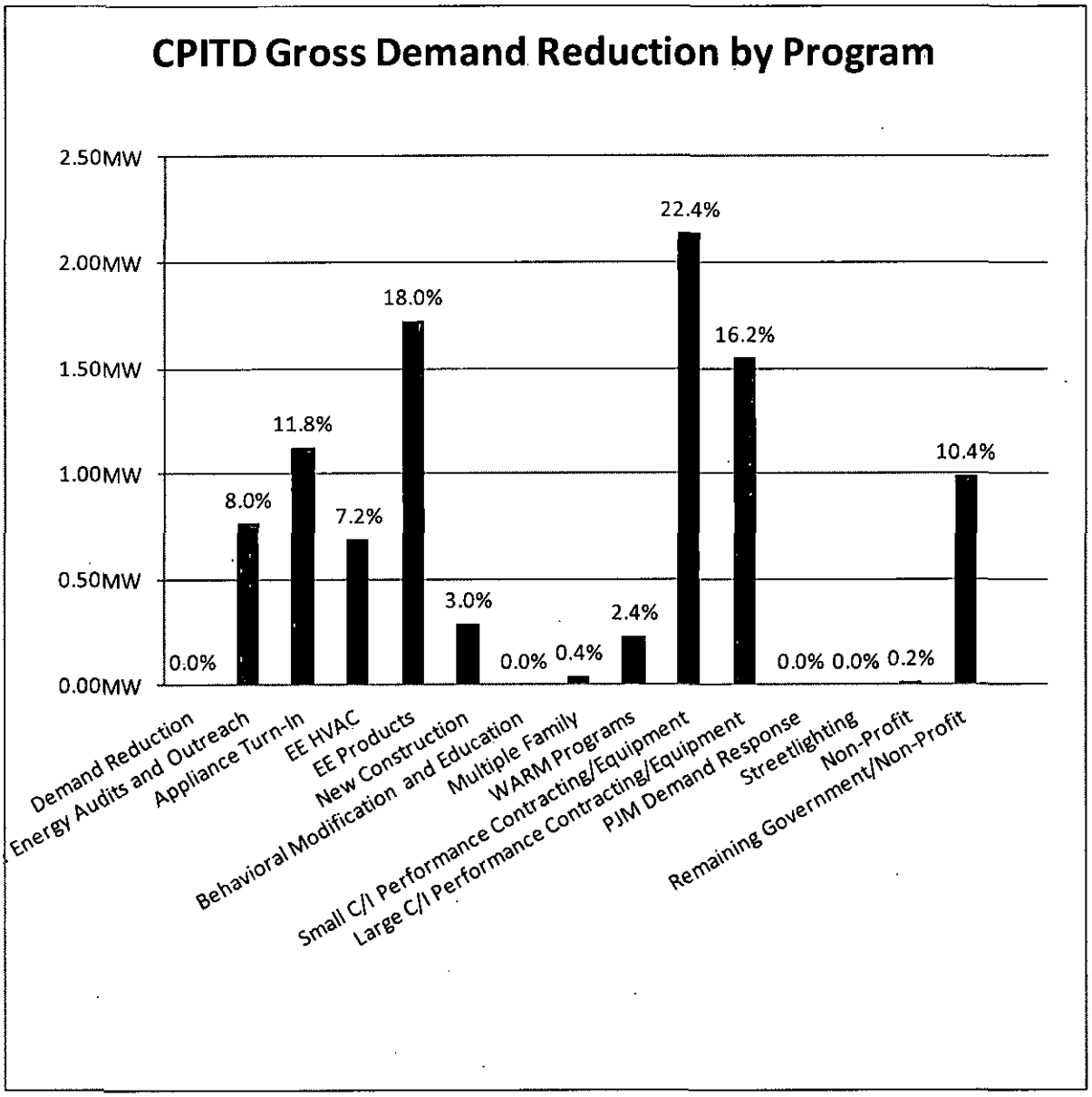
Program	PYTD Reported Gross Impact (MWh)	Preliminary Realization Rate	Preliminary PYTD Verified Impact (MWh)	Net-to-Gross Ratio	PYTD Net Impact (MWh)
Demand Reduction	0	n/a	0	100.0%	0
Home Energy Audits and Outreach	2,393	100.0%	2,393	100.0%	2,393
Appliance Turn-In	2,991	96.6%	2,889	100.0%	2,889
EE HVAC	939	100.0%	939	100.0%	939
EE Products	13,238	100.0%	13,238	100.0%	13,238
New Construction	823	100.0%	823	100.0%	823
Behavioral Modification and Education	0	n/a	0	100.0%	0
Multiple Family	0	n/a	0	100.0%	0
WARM Programs	355	100.0%	355	100.0%	355
Small C/I Performance Contracting/Equipment	2,190	100.0%	2,190	100.0%	2,190
Large C/I Performance Contracting/Equipment	624	100.0%	624	100.0%	624
PJM Demand Response	0	n/a	0	100.0%	0
Streetlighting	0	n/a	0	100.0%	0
Non-Profit	0	n/a	0	100.0%	0
Remaining Government/Non-Profit	750	100.0%	750	100.0%	750
TOTAL PORTFOLIO	24,303	99.6%	24,201	100.0%	24,201

NOTES: Realization rates for most programs are pending upon completion of data analysis of Q2 on-site visits.

1.3 Summary of Demand Impacts by Program

A summary of the reported demand reduction by program is presented in the following figure:

Figure 1-2: Reported Demand Reduction by Program through the End of the Reporting Period



A summary of demand reduction impacts by program through the end of the reporting period is presented in the following tables:

Table 1-6: Participation and Reported Gross Demand Reduction by Program through the End of the Reporting Period

	Participants			Reported Gross Impact (MW)		
Program	**IQ**	**PYTD**	**CPITD**	**IQ**	**PYTD**	**CPITD**
Demand Reduction	21	2,742	2,742	0.00	0.00	0.00
Home Energy Audits and Outreach	1,577	3,803	17,886	0.08	0.19	0.76
Appliance Turn-In	431	1,656	3,895	0.11	0.47	1.13
EE HVAC	184	1,809	2,400	0.05	0.52	0.69
EE Products	26,688	75,674	181,253	0.26	0.72	1.72
New Construction	75	237	362	0.10	0.21	0.29
Behavioral Modification and Education	0	0	0	0.00	0.00	0.00
Multiple Family	0	0	3,464	0.00	0.00	0.04
WARM Programs	141	506	4,873	0.01	0.06	0.23
Small C/I Performance Contracting/Equipment	13	31	184	0.14	0.46	2.14
Large C/I Performance Contracting/Equipment	1	6	46	0.01	0.10	1.55
PJM Demand Response	0	0	0	0.00	0.00	0.00
Streetlighting	0	0	127	0.00	0.00	0.00
Non-Profit	0	0	4	0.00	0.00	0.02
Remaining Government/Non-Profit	5	15	65	0.07	0.14	0.99
TOTAL PORTFOLIO	29,136	86,479	217,301	0.83	2.86	9.56

NOTES:
(a) Participation in the EE Products Program attributable to CFL Participation is 25,835 for IQ, 71,636 for PYTD, and 175,699 CPITD periods

Table 1-7: Reported Gross Demand Reduction by Program through the End of the Reporting Period

Program	Unverified Ex-Post Savings (MW)	Projects In Progress (MW)	PYTD Total Committed (MW)	EE&C Plan Estimate for Program Year (MW)	Percent of Estimate Committed (%)
Demand Reduction	0.00	0.00	0.00	0.81	0%
Home Energy Audits and Outreach	0.00	0.00	0.19	0.91	21%
Appliance Turn-In	0.00	0.01	0.48	0.63	76%
EE HVAC	0.00	0.01	0.53	0.71	75%
EE Products	0.00	0.01	0.73	0.64	114%
New Construction	0.00	0.00	0.21	0.07	281%
Behavioral Modification and Education	0.00	0.00	0.00	0.17	0%
Multiple Family	0.00	0.00	0.00	0.01	0%
WARM Programs	0.00	0.00	0.06	0.06	99%
Small C/I Performance Contracting/Equipment	0.00	0.77	1.22	2.10	58%
Large C/I Performance Contracting/Equipment	0.00	0.44	0.54	1.40	39%
PJM Demand Response	0.00	0.00	0.00	0.00	n/a
Streetlighting	0.00	0.00	0.00	0.00	n/a
Non-Profit	0.00	0.00	0.00	0.01	0%
Remaining Government/Non-Profit	0.00	0.13	0.26	1.15	23%
TOTAL PORTFOLIO	0.00	1.36	4.22	8.66	49%

NOTES:

"Unverified Ex Post Savings" are unverified savings pending approval of a TRM or Custom Measure Protocol by the Commission

A summary of evaluation adjusted demand impacts by program is presented in the following table:

Table 1-8: Verified Demand Reduction by Program through the End of the Reporting Period

Program	PYTD Reported Gross Impact (MW)	Preliminary Realization Rate	Preliminary PYTD Verified Impact (MW)	Net-to-Gross Ratio	PYTD Net Impact (MW)
Demand Reduction	0.00	n/a	0.00	100.0%	0.00
Home Energy Audits and Outreach	0.19	100.0%	0.19	100.0%	0.19
Appliance Turn-In	0.47	89.7%	0.42	100.0%	0.42
EE HVAC	0.52	100.0%	0.52	100.0%	0.52
EE Products	0.72	100.0%	0.72	100.0%	0.72
New Construction	0.21	100.0%	0.21	100.0%	0.21
Behavioral Modification and Education	0.00	n/a	0.00	100.0%	0.00
Multiple Family	0.00	n/a	0.00	100.0%	0.00
WARM Programs	0.06	100.0%	0.06	100.0%	0.06
Small C/I Performance Contracting/Equipment	0.46	100.0%	0.46	100.0%	0.46
Large C/I Performance Contracting/Equipment	0.10	100.0%	0.10	100.0%	0.10
PJM Demand Response	0.00	n/a	0.00	100.0%	0.00
Streetlighting	0.00	n/a	0.00	100.0%	0.00
Non-Profit	0.00	n/a	0.00	100.0%	0.00
Remaining Government/Non-Profit	0.14	100.0%	0.14	100.0%	0.14
TOTAL PORTFOLIO	2.86	98.3%	2.82	100.0%	2.82

NOTES:

1.4 Summary of Evaluation

Realization rates are calculated to adjust reported savings based on statistically significant verified savings measured by independent evaluators. The realization rate is defined as the percentage of reported savings that is achieved, as determined through the independent evaluation review. A realization rate of 1 or 100% indicates no difference between the reported and achieved savings. Realization rates are determined by certain attributes relative to one of three protocol types. Fully deemed TRM measure realization rates are driven by differences in the number of installed measures. Partially deemed TRM measure[14] realization rates are driven by: (1) differences in the number of installed measures; and (2) differences in the variables. Custom measure realization rates are driven by differences in the energy savings determined by approved protocols. The protocol type determines the data type that is sampled.

1.4.1 Impact Evaluation

ADM is conducting the impact evaluation for all programs that were implemented by August 31, 2010. ADM is employing batch-wise stratified sampling for the C/I Equipment and Government/Non-Profit programs, stratified sampling for the residential "Warm Extra Measures" program, and simple random sampling for all other programs. In accordance with the PA Statewide Evaluator's recent updates to the Audit Plan, the sample sizes will be sufficient to report verified savings with ±15% relative precision at the 85% confidence level for all programs. Verified savings will be reported with ±10% precision at the 90% confidence level for the residential and non-residential sectors respectively, and the government/non-profit sectors will be treated as independent programs with 85/15 confidence/precision if their savings comprise at least 20% of the sector-level savings.

In order to conduct the impact evaluation for Penn Power's energy efficiency and conservation programs, ADM employs the following measures:

- Review of ex-ante calculations, assumptions and evaluation protocols in the TRM;
- Participation in technical working groups regarding the addition of new evaluation protocols to the TRM;
- Drafting, peer-review, and submittal of evaluation protocols for the interim TRM;
- Review of the Statewide Evaluator's Audit Plan;
- Drafting of impact evaluation plans for all programs;
- Review of rebate forms and data collection requirements for programs;
- Review of energy efficiency program tracking protocols and systems;
- Review of ex-ante calculations associated with rebates, and pertinent feedback to the Companies;
- Drawing of samples for impact evaluation;
- Site visits, monitoring, and other data gathering;
- Analysis of data collected on-site;
- Determination of verified energy savings and demand reductions; and
- Determination of the verified energy savings and demand reductions attributable to the low-income residential sector.

The current program year (Year 3), beginning June 1, 2011, will be the second year of full-scale portfolio implementation. ADM is continuing the general approach used for Year 2 for Penn Power's portfolio for the current program year. After a thorough review of last year's impact evaluation, ADM may decide to

[14] TRM measures with stipulated values and variables.

alter the sampling scheme or evaluation protocols for certain programs. In the case of this event ADM will first seek the SWE's guidance an approval to do so.

The realization rates for each program are presented in the following table:

Table 1-9: Summary of Realization Rates and Confidence Intervals (CI) for kWh

Program	PYTD Sample Participants	Program Year Sample Participant Target	Preliminary Realization Rate for kWh	Confidence and Precision for kWh	Preliminary Realization Rate for kW	Confidence and Precision for kW
Demand Reduction	0	Census	n/a	n/a	n/a	n/a
Home Energy Audits and Outreach	0	300 survey, 20 on-site	100.0%	n/a	100.0%	n/a
Appliance Turn-In	Desk Review: 100%	70 survey	96.6%	n/a	89.7%	n/a
EE'HVAC	0	120 desk review, 24 on-site, 60 interview	100.0%	n/a	100.0%	n/a
EE Products	0	20 on-site, 300 desk review	100.0%	n/a	100.0%	n/a
New Construction	0	15 on-site, 40 desk review	100.0%	n/a	100.0%	n/a
Behavioral Modification and Education	0	Census	n/a	n/a	n/a	n/a
Multiple Family	0	TBD	n/a	n/a	n/a	n/a
WARM Programs	0	24 on-site + billing analysis of PY2 participants	100.0%	n/a	100.0%	n/a
Small C/I Performance Contracting/Equipment	0	35	100.0%	n/a	100.0%	n/a
Large C/I Performance Contracting/Equipment	0	20	100.0%	n/a	100.0%	n/a
PJM Demand Response	0	TBD - near census	n/a	n/a	n/a	n/a
Streetlighting	0	20	n/a	n/a	n/a	n/a
Non-Profit	0	TBD - near census	n/a	n/a	n/a	n/a
Remaining Government/Non-Profit	0	35	100.0%	n/a	100.0%	n/a
PORTFOLIO	0	n/a	n/a	n/a	n/a	n/a

NOTES: Realization rates for most programs are pending upon completion of primary data collection and analysis. They are nominally set at 100% based on tracking data review and historical results from PY1 and PY2.

1.4.2 Process Evaluation

In May and June, 2010, Tetra Tech (subcontracted to ADM) conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, Tetra Tech, the Companies' internal staff and contractors drafted, for each program, a process evaluation plan and a program logic model which will serve as a visual representation for the program processes.

The process evaluation effort includes the following initiatives:

- Review of the measures and program delivery mechanisms in the Companies' plan portfolios;
- Interviews with the Companies' internal staff and Conservation Service Provider (CSP) staff;
- Drafting of process evaluation plans for all programs;
- Creation of logic models for each program; and,
- Identification of researchable issues for each program.

The process evaluation has also resulted in immediate feedback to the Companies' regarding the following items:

- Review of rebate forms to ensure that proper data fields are collected and documented;
- Review of various program tracking systems;
- Review of program evaluability, with specific suggestions to Penn Power and each Company that will increase the evaluability of certain programs; and,
- Projections of energy savings achievements by May 31 2011 for key programs, and projections of potential energy savings under alternate scenarios that involve program modifications.

As of this writing, most programs in Penn Power's portfolio are online and actively adding participants. Tetra Tech completed interviews with program managers, CSPs, program participants and non-participants to evaluate the process. Penn Power personnel are currently reviewing Tetra Tech's reports for several important programs.

1.5 Summary of Finances

The Total Resource Cost Test (TRC) demonstrates the cost-effectiveness of a program by comparing the total economic benefits to the total costs. Consistent with prior guidance from PUC Staff, this Report will not include information related to TRC Benefit-to-Cost Ratios. A breakdown of the portfolio finances is presented in the following table:

Table 1-10: Summary of Portfolio Finances: TRC Test[15]

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$716,531	$1,854,920	$7,422,008
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$716,531**	**$1,854,920**	**$7,422,008**
B.1	Design & Development[1]	$74	$2,040	$80,584
B.2	Administration[2]	$380,777	$1,981,441	$3,779,084
B.3	Management[3]	$59,853	$174,894	$467,583
B.4	Marketing[4]	$5,814	-$2,711	$126,302
B.5	Technical Assistance[5]	$3,836	$24,899	$80,361
B	**Subtotal EDC Implementation Costs**	**$450,354**	**$2,180,563**	**$4,533,913**
C	**EDC Evaluation Costs**	$27,850	$187,762	$346,856
D	**SWE Audit Costs**	$0	$38,800	$100,150
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$1,194,736**	**$4,262,044**	**$12,402,927**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1] Includes cost of EE Expert
[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5] Includes costs for Tracking and Reporting System

[15] Definitions for terms in following table are subject to TRC Order. Various cost and benefit categories are subject to change pending the outcome of TRC Technical Working Group discussions.

2 Portfolio Results by Sector

Page 11 of the EE&C Implementation Order issued on January 15, 2009 provides requirements for specific sectors. In order to comply with these requirements, each program has been categorized into one of the following sectors:

1. Residential EE (excluding Low-Income)
2. Residential Low-Income EE
3. Small Commercial & Industrial EE
4. Large Commercial & Industrial EE
5. Government & Non-Profit EE

A summary of portfolio gross energy savings and gross demand reduction by sector is presented in the following figures:

Figure 2-1: PYTD Reported Gross Energy Savings by Sector

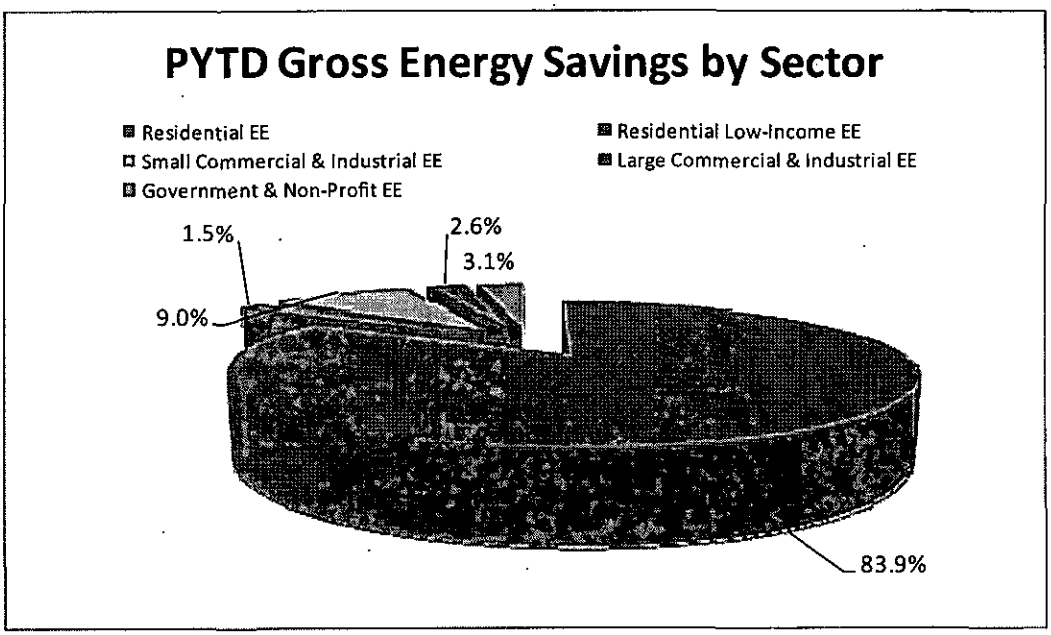


Figure 2-2: PYTD Reported Gross Demand Reduction by Sector

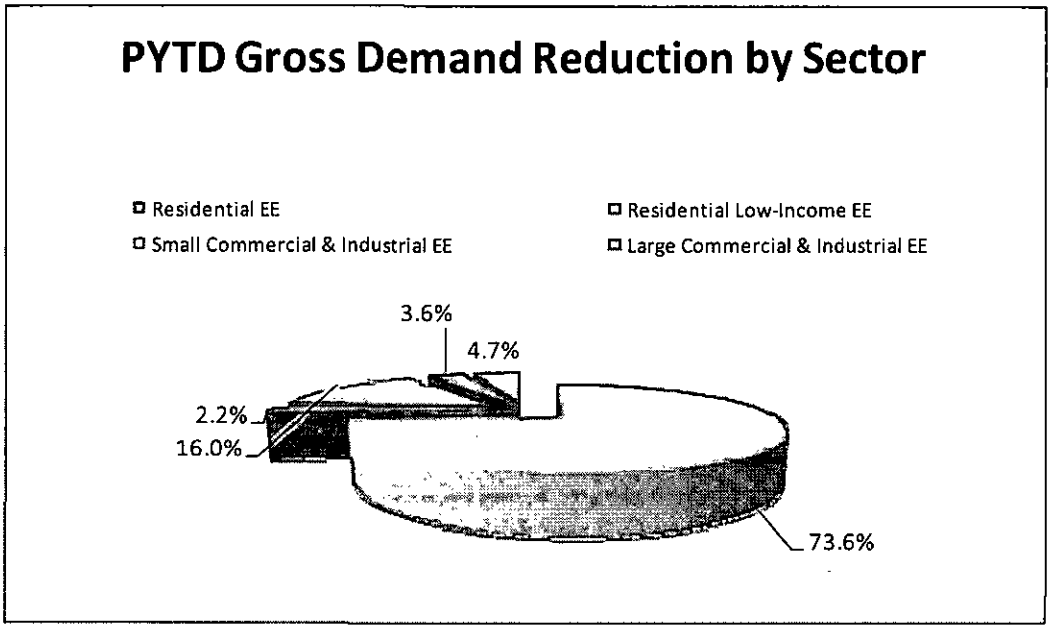


Table 2-1: Reported Gross Energy Savings by Sector through the End of the Reporting Period

Market Sector	Reported Gross Impact (MWh)			Projects in Progress	Total Committed	Unverified Ex Post Savings
	IQ	PYTD	CPITD			
Residential EE	7,078	20,385	52,776	268	20,652	0
Residential Low-Income EE	84	355	2,548	6	360	0
Small Commercial & Industrial EE	611	2,190	12,686	4,406	6,596	0
Large Commercial & Industrial EE	8	624	15,135	2,174	2,799	0
Government & Non-Profit EE	436	750	10,216	1,574	2,324	0
TOTAL PORTFOLIO	8,217	24,303	93,361	8,428	32,731	0

Notes:

Unverified Ex Post Savings" are unverified savings pending approval of a TRM or Custom Measure Protocol by the Commission

Table 2-2: Reported Gross Demand Reduction by Sector through the End of the Reporting Period

Market Sector	Reported Gross Impact (MW)			Projects in Progress	Total Committed	Unverified Ex Post Savings
	IQ	PYTD	CPITD			
Residential EE	0.59	2.11	4.64	0.03	2.13	0.00
Residential Low-Income EE	0.01	0.06	0.23	0.00	0.06	0.00
Small Commercial & Industrial EE	0.14	0.46	2.14	0.77	1.22	0.00
Large Commercial & Industrial EE	0.01	0.10	1.55	0.44	0.54	0.00
Government & Non-Profit EE	0.07	0.14	1.01	0.13	0.26	0.00
TOTAL PORTFOLIO	0.83	2.86	9.56	1.36	4.22	0

Notes:

Unverified Ex Post Savings" are unverified savings pending approval of a TRM or Custom Measure Protocol by the Commission

2.1 Residential EE Sector

The sector target for annual energy savings is 25,907 MWh and the sector target for annual peak demand reduction is 3.94 MW.

A sector summary of results by program is presented in the following tables:

Table 2-3: Summary of Residential EE Sector Incremental Impacts by Program through the End of the Reporting Period

Residential EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWH)	IQ Reported Gross Demand Reduction (MW)
Demand Reduction	0	0	0.00
Home Energy Audits and Outreach	1,577	993	0.08
Appliance Turn-In	431	779	0.11
EE HVAC	184	199	0.05
EE Products	26,688	4,834	0.26
New Construction	75	273	0.10
Behavioral Modification and Education	0	0	0.00
Multiple Family	0	0	0.00
Sector Total	28,955	7,078	0.59

NOTES:

(a) Participation in the EE Products Program attributable to CFL Participation is 25,835 for IQ, 71,636 for PYTD, and 175,699 CPITD periods

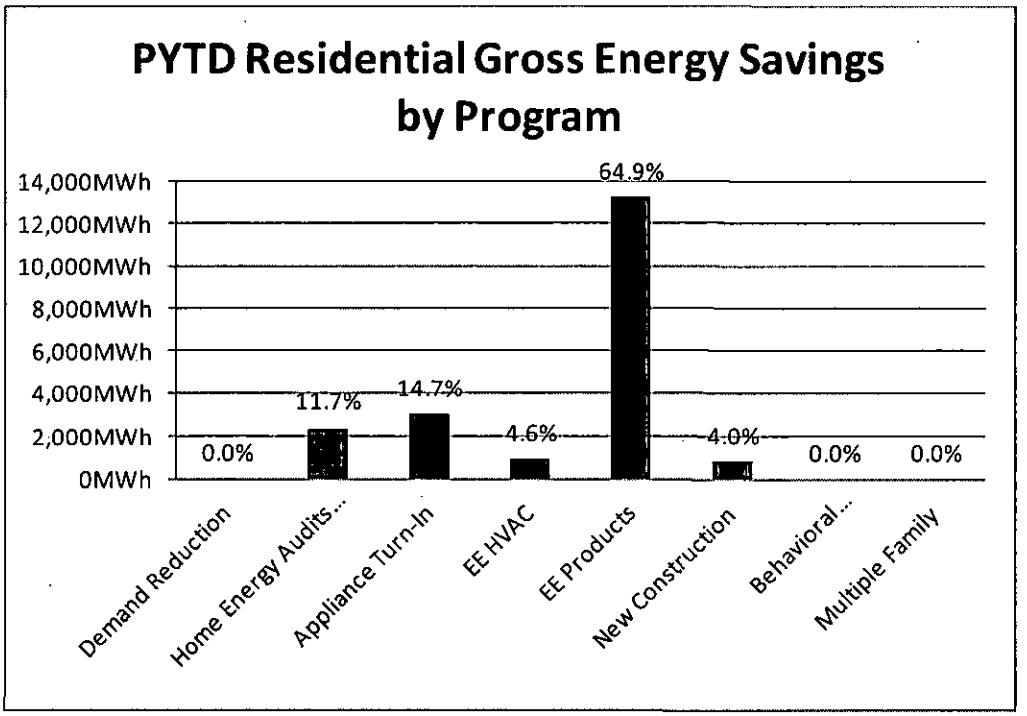
Table 2-4: Summary of Residential EE Sector PYTD Impacts by Program through the End of the Reporting Period

Residential EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWH)	PYTD Reported Gross Demand Reduction (MW)
Demand Reduction	21	0	0.00
Home Energy Audits and Outreach	3,803	2,393	0.19
Appliance Turn-In	1,656	2,991	0.47
EE HVAC	1,809	939	0.52
EE Products	75,674	13,238	0.72
New Construction	237	823	0.21
Behavioral Modification and Education	0	0	0.00
Multiple Family	0	0	0.00
Sector Total	83,200	20,385	2.11

NOTES:
(a) Participation in the EE Products Program attributable to CFL Participation is 25,835 for IQ, 71,636 for PYTD, and 175,699 CPITD periods

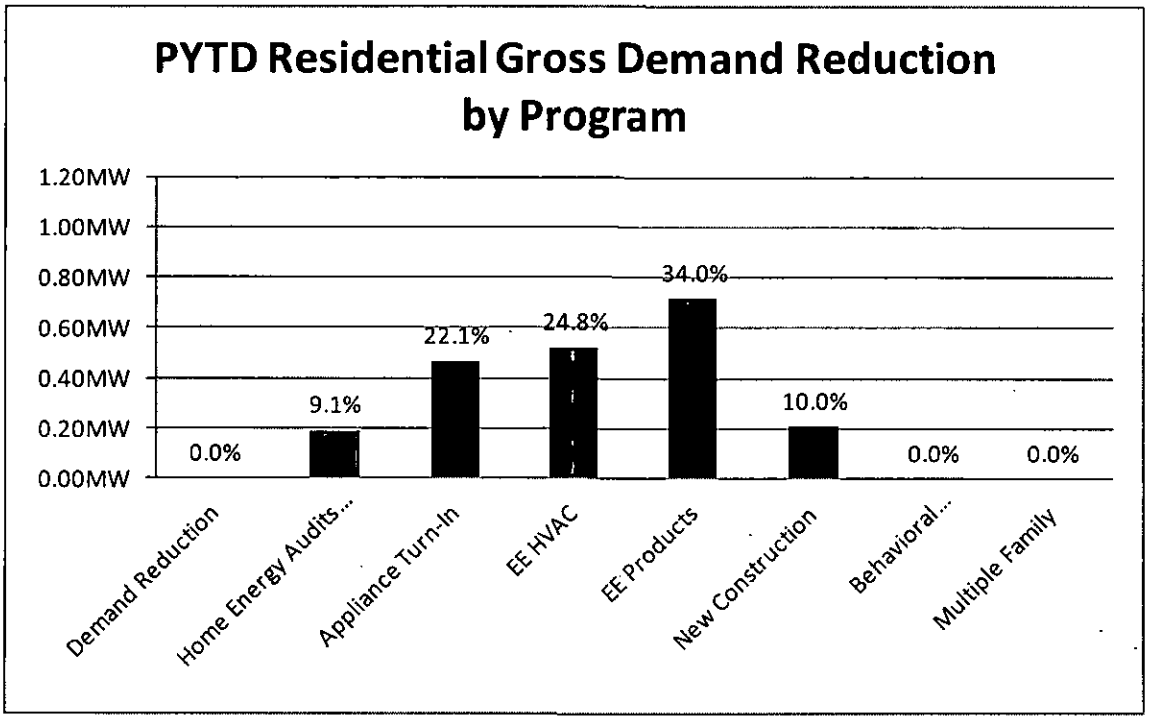
A summary of the sector energy savings by program is presented in the following figure:

Figure 2-3: Summary of Residential EE Sector PYTD Reported Gross Energy Savings by Program



A summary of the sector demand reduction by program is presented in the following figure:

Figure 2-4: Summary of Residential EE Sector PYTD Reported Demand Reduction by Program



2.2 Residential Low-Income EE Sector

The sector target for annual energy savings is 570 MWh and the sector target for annual peak demand reduction is 0.06 MW.

A sector summary of results by program is presented in the following tables:

Table 2-5: Summary of Residential Low-Income EE Sector Incremental Impacts by Program through the End of the Reporting Period

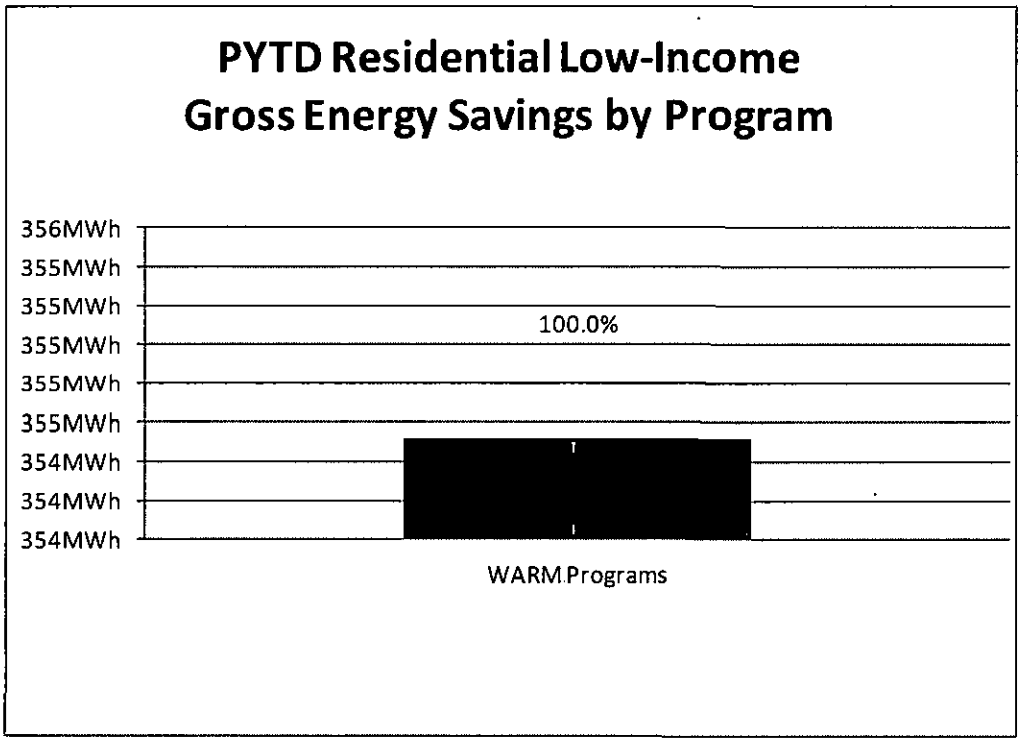
Residential Low-Income EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWH)	IQ Reported Gross Demand Reduction (MW)
WARM Programs	141	84	0.01
Sector Total	141	84	0.01
NOTES:			

Table 2-6: Summary of Residential Low-Income EE Sector PYTD Impacts by Program through the End of the Reporting Period

Residential Low-Income EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWH)	PYTD Reported Gross Demand Reduction (MW)
WARM Programs	506	355	0.06
Sector Total	506	355	0.06
NOTES:			

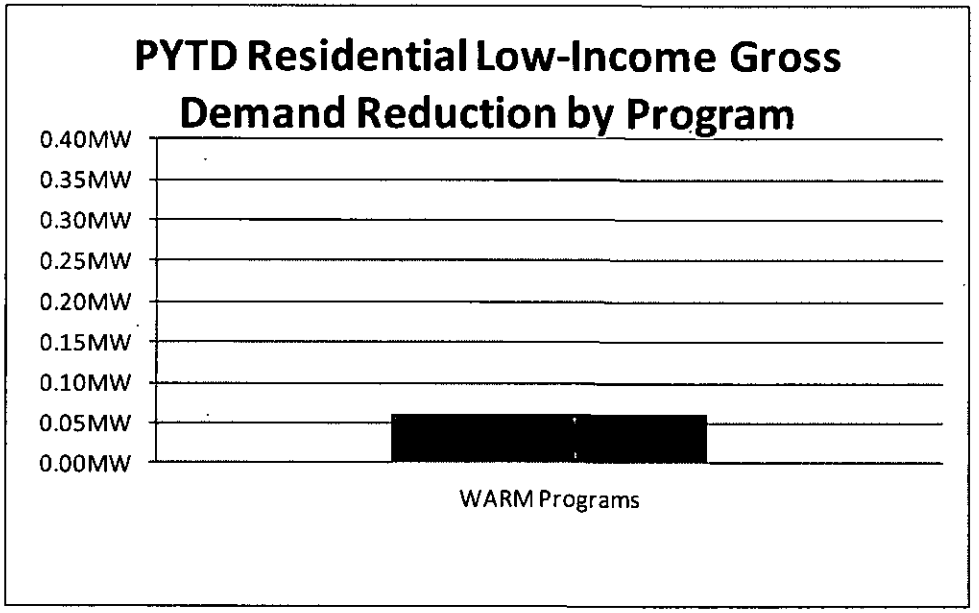
A summary of the sector energy savings by program is presented in the following figure:

Figure 2.5: Summary of Residential Low-Income EE Sector PYTD Reported Gross Energy Savings by Program



A summary of the sector demand reduction by program is presented *in* the following figure:

Figure 2.6: Summary of Residential Low-Income EE Sector PYTD Reported Demand Reduction by Program



2.3 Small Commercial & Industrial EE Sector

The sector target for annual energy savings is 12,407 MWh and the sector target for annual peak demand reduction is 2.1 MW.

A sector summary of results by program is presented in the following tables. As noted in Section 4.10, energy efficiency and peak demand reduction savings for the Small Commercial and Industrial Sector Energy Audit & Assessment, and Equipment Rebate Programs have been combined for purposes of this report.

Table 2-7: Summary of Small Commercial/Industrial EE Sector Incremental Impacts by Program through the End of the Reporting Period

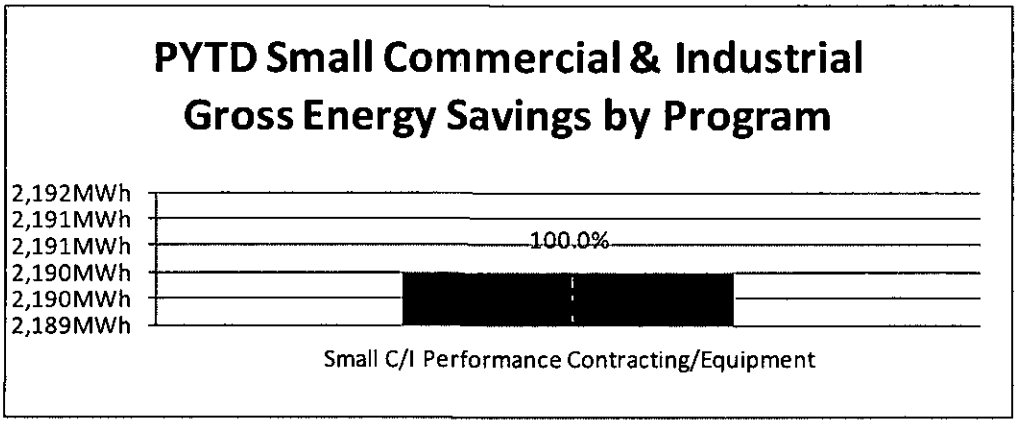
Small Commercial/Industrial EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWH)	IQ Reported Gross Demand Reduction (MW)
Small C/I Equipment	13	611	0.14
Sector Total	13	611	0.14
NOTES:			

Table 2-8: Summary of Small Commercial/Industrial EE Sector PYTD Impacts by Program through the End of the Reporting Period

Small Commercial/Industrial EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWH)	PYTD Reported Gross Demand Reduction (MW)
Small C/I Equipment	31	2,190	0.46
Sector Total	31	2,190	0.46
NOTES:			

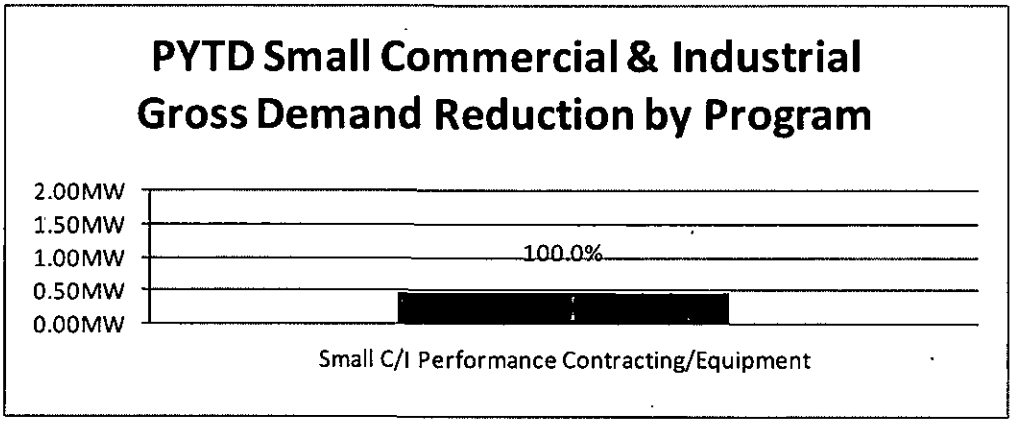
A summary of the sector energy savings by program is presented in the following figure:

Figure 2.7: Summary of Small Commercial & Industrial EE Sector PYTD Reported Gross Energy Savings by Program



A summary of the sector demand reduction by program is presented in the following figure:

Figure 2.8: Summary of Small Commercial & Industrial EE Sector PYTD Reported Demand Reduction by Program



2.4 Large Commercial & Industrial EE Sector

The sector target for annual energy savings is 12,679 MWh and the sector target for annual peak demand reduction is 1.4 MW.

A sector summary of results by program is presented in the following tables:

Table 2-9: Summary of Large Commercial/Industrial EE Sector Incremental Impacts by Program through the End of the Reporting Period

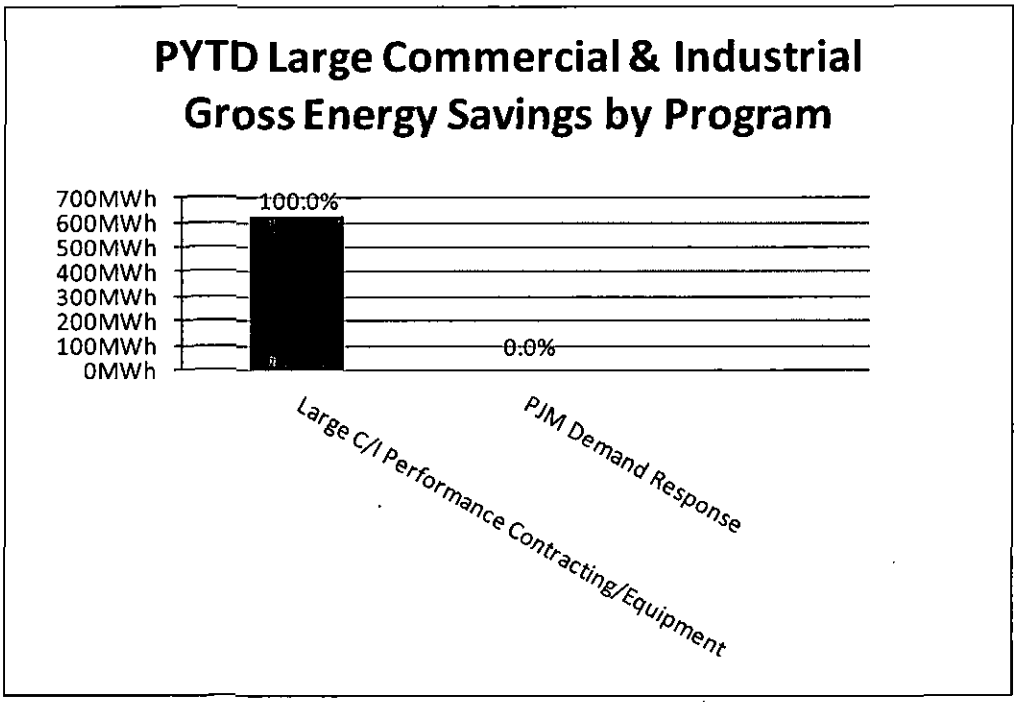
Large Commercial/Industrial EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWH)	IQ Reported Gross Demand Reduction (MW)
Large C/I Equipment	1	8	0.01
PJM Demand Response	0	0	0.00
Sector Total	1	8	0.01
NOTES:			

Table 2-10: Summary of Large Commercial/Industrial EE Sector PYTD Impacts by Program through the End of the Reporting Period

Large Commercial/Industrial EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWH)	PYTD Reported Gross Demand Reduction (MW)
Large C/I Equipment	6	624	0.10
PJM Demand Response	0	0	0.00
Sector Total	6	624	0.10
NOTES:			

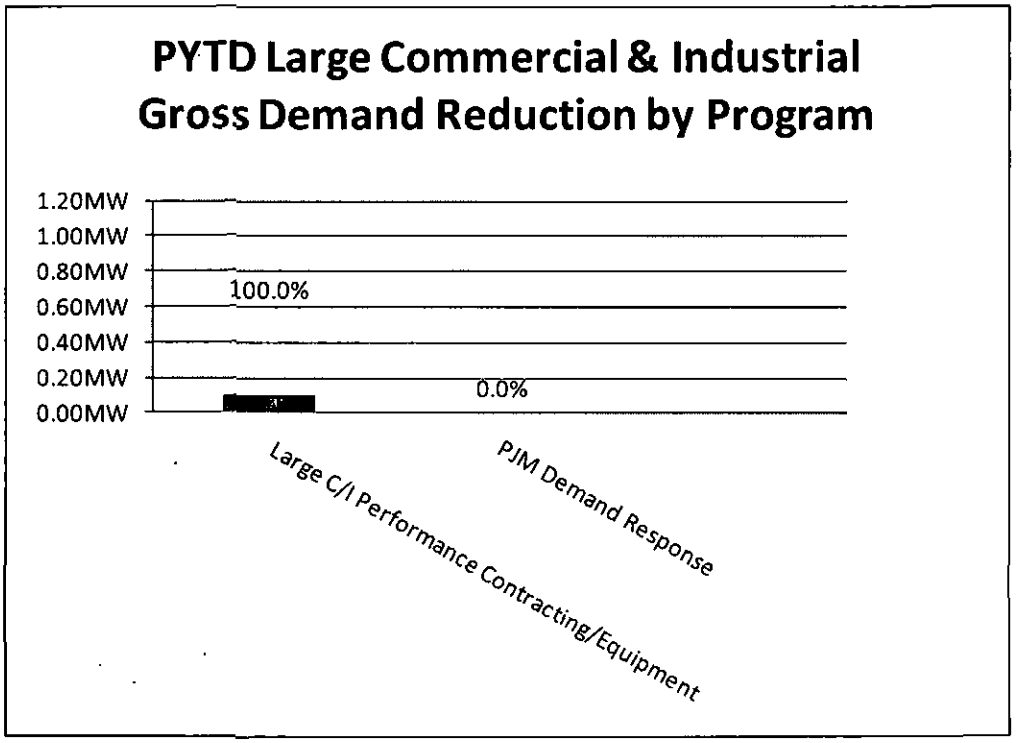
A summary of the sector energy savings by program is presented in the following figure:

Figure 2.9: Summary of Large Commercial & Industrial EE Sector PYTD Reported Gross Energy Savings by Program



A summary of the sector demand reduction by program is presented in the following figure:

Figure 2.10: Summary of Large Commercial & Industrial EE Sector PYTD Reported Demand Reduction by Program



2.5 Government & Non-Profit EE Sector

The sector target for annual energy savings is 9,042 MWh and the sector target for annual peak demand reduction is 1.16 MW.

A sector summary of results by program is presented in the following tables:

Table 2-11: Summary of Governmental EE Sector Incremental Impacts by Program through the End of the Reporting Period

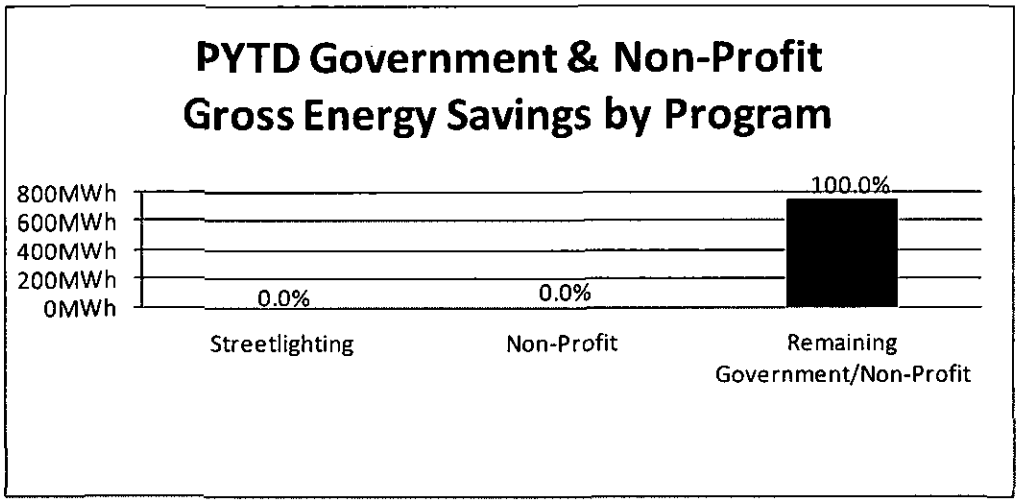
Governmental EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWH)	IQ Reported Gross Demand Reduction (MW)
Streetlighting	0	0	0.00
Non-Profit	0	0	0.00
Remaining Government/Non-Profit	5	436	0.07
Sector Total	5	436	0.07
NOTES:			

Table 2-12: Summary of Governmental EE Sector PYTD Impacts by Program through the End of the Reporting Period

Governmental EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWH)	PYTD Reported Gross Demand Reduction (MW)
Streetlighting	0	0	0.00
Non-Profit	0	0	0.00
Remaining Government/Non-Profit	15	750	0.14
Sector Total	15	750	0.14
NOTES:			

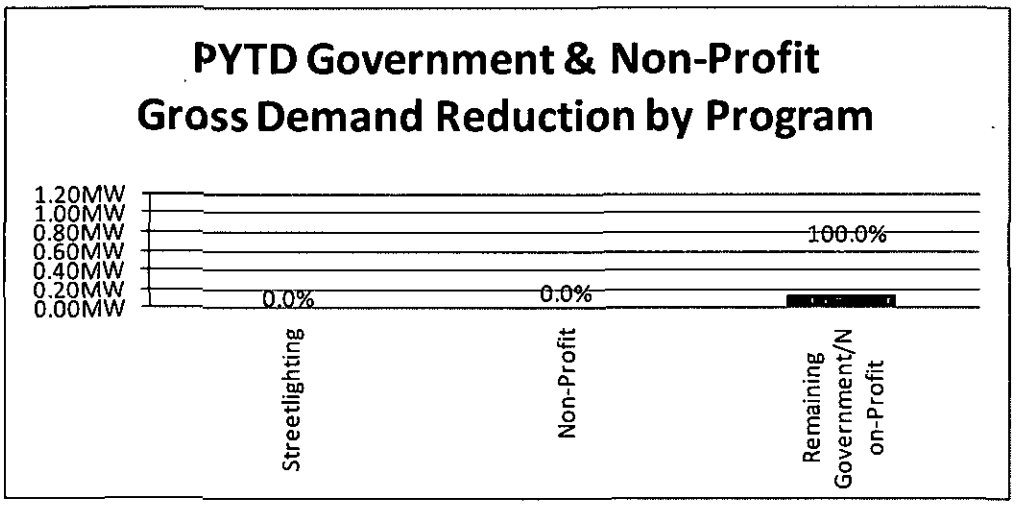
A summary of the sector energy savings by program is presented in the following figure:

Figure 2.11: Summary of Government & Non-Profit EE Sector PYTD Reported Gross Energy Savings by Program



A summary of the sector demand reduction by program is presented in the following figure:

Figure 2.12: Summary of Government & Non-Profit EE Sector PYTD Reported Demand Reduction by Program



3 Demand Response

Demand response programs specifically target the reduction of peak demand through various demand-side management strategies. Penn Power currently does not have any Demand Reduction savings to report in its 100 peak hours as interpreted by the PUC under Act 129[16].

[16] The Commission's Implementation Order in Docket No. M-2008-2069887 sets forth that by May 31, 2013, peak demand is to be reduced by a *minimum of four-and-a-half* percent (4.5%) of the EDC's annual system peak demand in the 100 hours of highest demand, measured against the EDC's peak demand during the period of June 1, 2007 through May 31, 2008. The Commission defined the summer months of June through September 2012 as the appropriate time to reduce annual system peak demand in the 100 hours of highest demand.

4 Portfolio Results by Program

4.1 Residential Demand Reduction Program

This program pays an incentive to participants who agree to have controls installed on their Central Air Conditioning (CAC) systems that enable Penn Power to limit CAC operation during peak load periods. Once such devices are installed, the utility will have the ability to cycle air conditioning compressors or reset temperatures for the duration of the load control event. It is anticipated that this program will be activated over Penn Power's top 100 load hours, typically from noon – 7 pm on selected weekdays.

4.1.1 Program Logic

Initially, the program targets customers located in major load areas with higher customer density to minimize risks associated with communications coverage. Customers will receive a one time cash payment in the first year as an enrollment incentive. In each following year, customers will receive up to $15 per summer month for participation (as will be determined in consultation with the CSP).

In order to gain more robust, longer term program participation, direct load control devices will be chosen that will have the capability to utilize multiple communication protocols to facilitate the eventual migration of this program and leverage the communication investment from an Advanced Metering Infrastructure (AMI) solution.

Opportunities for expansion will be examined as technology options improve over time. The Companies will bid its Residential Direct Load Control programs into the PJM Reliability Pricing Model (RPM). The revenues received by the Companies, if any, from bidding and clearing residential Direct Load Control programs into the applicable RPM auctions, will be netted against the program costs, including but not limited to: administration, contracted services, credits provided to customers, and PJM penalties for underperformance.

4.1.2 Program M&V Methodology

Penn Power will verify that demand reduction targets are being achieved consistent with requirements defined in PJM Manual 19, Attachment B. Penn Power has selected technology using two-way communications that supports robust measurement and verification, and is currently in the process of working with the selected CSP to develop an M&V methodology specific to that technology for review by PJM and the SWE.

4.1.3 Program Sampling

The sampling will be sufficient to determine this program's gross impact with 10% relative precision at the 90% confidence level[17]. Sampling methodology is currently under development.

4.1.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the ADM, internal staff and contractors drafted a program logic model

[17] The confidence/precision requirements for this program exceed the 85/15 minimum requirement because this program is expected to comprise the majority of the demand reduction in the residential sector.

which will serve as a visual representation for the program processes. As the programs near launch, additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Once the program is launched, participant surveys, non-participant surveys, and drop-out surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. If the goals are appropriate, the process evaluation will identify specific best practices that may help the Companies reach the program goals.

4.1.5 Program Partners and Trade Allies

Penn Power selected Honeywell Utility Solutions for the management of the Direct Load Control program.

4.1.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-1: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$120	$66,569	$98,569
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$120**	**$66,569**	**$98,569**
B.1	Design & Development[1]	$3	$82	$4,367
B.2	Administration[2]	$50,590	$631,635	$839,082
B.3	Management[3]	$2,554	$6,774	$24,002
B.4	Marketing[4]	$590	$2,582	$6,320
B.5	Technical Assistance[5]	$96	$612	$3,040
B	**Subtotal EDC Implementation Costs**	**$53,833**	**$641,685**	**$876,811**
C	**EDC Evaluation Costs**	$3,935	$10,353	$13,943
D	**SWE Audit Costs**	$0	$1,567	$5,676
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$57,888**	**$720,173**	**$994,998**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:

[1] Includes cost of EE Expert

[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5] Includes costs for Tracking and Reporting System

4.2 Residential Home Energy Audit Program

The purpose of the Home Energy Audit Program is to: 1) identify energy savings opportunities; 2) install basic low-cost measures; and 3) make customers aware of other programs offered by Penn Power.

Households will be able to identify energy saving opportunities through three types of home energy audits.

1. Online Audit – This program is a self-administered on-line audit that analyzes historic energy use, and calculates energy savings based on customer responses to a series of questions. Customers without internet access can complete the audit over the phone with a company representative. Customers who complete the on-line audit are eligible to receive an energy conservation kit valued at up to $104 once the audit is complete and submitted. There is no additional charge to complete the on-line audit.
2. Walk Through audit – This program is an on-site audit administered by a trained professional auditor. Customers pay a fee of $50 for the walk-through on-site audit and will receive direct-installed low-cost energy savings measures of equal value selected by the trained auditor based on the needs of the home.
3. Whole House Comprehensive audit – This program provides comprehensive diagnostic assessments of households followed by direct installation of selected low-cost measures plus incentives for implementation of measures addressing building shell, appliances and other energy-consuming features. Customers are eligible to receive up to $300 in rebates for participating in a two-part (test in/test out) comprehensive energy audit and up to $900 in rebates calculated on performance-based kWh savings achieved by installing energy-saving improvements. Penn Power

4.2.1 Program Logic

Online and Walk Through audits

This program involves consumer education through generic energy savings recommendations combined with information customized to a specific dwelling based on either self-reported information or input by a trained auditor. This program serves as a portal to other programs by informing customers about additional energy-saving solutions.

Whole Building Comprehensive

This program provides comprehensive EE diagnostic assessments followed by direct installation of selected low-cost measures plus incentives to households for implementation of associated measures. Customers pay open market rates for the comprehensive audit while being eligible to receive incentives to offset the audit cost. Performance-based rebates up to $900 will be paid based on calculated energy savings from major measures installed.

This is a full-service program similar to the EPA's Home Performance with ENERGY STAR program that involves test-in/test-out blower-door procedures, identification and installation of energy savings opportunities and, at the contractor's discretion, relevant health and safety measures.

Estimates of low-income participation by county and census are included in Penn Power's annual report to the PUC

4.2.2 Program M&V Methodology

Online and Walk Through Audits

This program has two components: online audits and walk-through audits. While the online audits component began in Q4 PY1, the walk-through component of the program began implementation in the Q1 PY2. The evaluation process used a combination of on-site visits and an online survey data collection system. The findings are being used to fine-tune the measures for this program as well as other residential programs that use the same measures.

Gross Impact Analysis for the Energy Conservation Kit Contents

Customers will receive one of two separate energy conservation kits based on their hot water fuel source. The kit provided to customers with electric water heating consists of compact fluorescent light bulbs (CFLs), LED night lights, aerators and aerator adapters, a furnace whistle, "smart" power strips, and a low flow showerhead. The kit provided to customers with non-electric water heating consists of CFLs, specialty dimmable CFLs, LED night lights, a furnace whistle, and "smart" power strips.

In evaluating the gross impact analysis for the energy conservation kits, two items must be determined:

1. The average energy savings and demand reduction for the kit elements that are installed; and,
2. The installation rate for the various kit elements.

The first item has been determined through participation in technical working groups held by the PA Statewide Evaluator. The expected energy savings and demand reduction for each kit element has been established through a combination of engineering calculations and literature review. The partially deemed savings protocols for the kit contents are expected to be incorporated into the PA TRM.

The second item, installation rates, are determined through a combination of on-site visits and online surveys, except for CFLs which are given a "deemed" installation rate of 0.84. For a particular site in a sample, the installation rate for each kit element takes on a binary value of 1, if the element is installed in accordance to the principles that define that element as an energy efficiency measure, and 0 otherwise. In particular, faucet aerators are only counted as "installed" if they are installed in a home that has electric water heating. Smart power strips are counted as "installed" if: (1) there are appliances plugged into the "controlled" sockets that are turned on and off by the smart strip; and (2) an appliance that is not uniformly on is installed in the "master" socket.

The energy conservation kits are mailed to the Pennsylvania address on record for those ratepayers who complete the on-line energy audit questionnaire. Shipment tracking logs are used to verify the quantity of the kits mailed and "returns" due to wrong address that are sent back to the warehouse are not counted. Duplicate shipments to the same account number are also not counted. The online survey instrument that was used to verify that the shipped energy conservation kits were actually installed asks a series of questions that determine how many of each item was installed and where each item was installed. The accuracy of the online survey instrument was verified through on-site data collection activities of a separate sample of the online kit recipients.

Gross Impact Analysis for the Walk-Through Audits

The items that are installed during the walk-through visits include a variable quantity of conservation kit items, and other low-cost measures to be determined or judged as appropriate by the auditor. Most of the energy efficiency measures distributed in the walk-through audits have energy savings protocols that are in the PA TRM. The energy savings are determined by counting the number of each item installed by each contractor. These counts are checked for those measures which only have savings in homes with electric water heating. During the remaining implementation period, the savings will be further verified through a telephone survey effort focusing on the installation rates. A sub-sample of the survey respondents will be selected for on-site data verification activities.

Whole Building Comprehensive

The gross impact analysis for the program has three components:

1. Verify that a sample of participant homes are being appropriately evaluated for program benefits with accurate pre- and post-upgrade diagnostic tests and to verify estimates of savings are performed in accordance with the TRM,

2. Verify the rate of participant homes to install and continue to use the program induced low- and medium-cost upgrades,
3. Determine the savings achieved through the comprehensive residential upgrade program.

Following significant levels of participation in the program (i.e. over approximately 30 participants), additional verification work will be performed. First, the energy savings of the program will be determined through an exploratory billing analysis. For the exploratory billing analysis to occur, monthly billing data will be required for both participants and non-participants.

If the exploratory billing analysis is not possible, the energy impacts will be determined using an engineering analysis. The baseline and as-built performance of each sample participant home will be determined by obtaining the original electronic data file from the energy auditor's simulation software and updating it to match the pre-existing and as-built conditions observed during the on-site data collection and monitoring visit. If necessary, the simulation software can be calibrated to monthly usage data obtained from customer bills.

A combined telephone and field survey of the sample will verify participation rates, if the home is occupied or not, to verify heating fuel type and outside unit air conditioner/heat pump efficiency, and rate of referral to other rebate programs. The energy savings and demand reductions for any energy efficiency components not incorporated into the comprehensive building simulation model and any measures installed through the other residential rebate programs will be determined based upon the methods outlined in those programs.

4.2.3 Program Sampling

The two program components - online and walk-through audits - are treated as separate programs, each with distinct populations, samples, and realization rates.

Online Audits

There are expected to be approximately 30,000 conservation kits sent to participants of the online audits in this program year. The sampling approach for the online audit program component is batch-wise simple random sampling on a quarterly basis. Three tiers of sampling involved.

1. A census of the energy and demand savings calculations in the program tracking data are reviewed to ensure that the energy savings and demand reductions are claimed according to the protocols in the PA TRM.
2. The sample size for online and telephone surveys will be sufficient to determine gross impact with ±5% relative precision at the 90% confidence level. The estimated required sample size is 70 participants per quarter.
3. An additional 20 sites (corresponds to approximately 90/15 confidence/precision) will be randomly selected for on-site verification.

Walk-Through Audits

There are expected to be fewer than 100 walk-through audits in this program year. The sampling approach for the walk-through audit program component is batch-wise simple random sampling on a quarterly basis. Three tiers of sampling involved.

1. A census of the energy and demand savings calculations in the program tracking data are reviewed to ensure that the energy savings and demand reductions are claimed according to the protocols in the PA TRM.

2. The sample size for online and telephone surveys will be sufficient to determine gross impact with ±10% relative precision at the 90% confidence level. The estimated required sample size is 40 participants per year.
3. An additional 5 sites (corresponds to approximately 90/15 confidence/precision) will be randomly selected for on-site verification.

The sample size for on-site visits is small because (a) this program component accounts for a small fraction of overall program savings and (b) as a direct install program, the correspondence between verified and claimed savings is expected to be very good, making for a small error ratio.

Whole Building Comprehensive

The sampling approach for this program is batch-wise stratified random sampling on a quarterly basis. The sample size will be sufficient to determine this program's gross impact with ±15% relative precision at the 85% confidence level. The sample will be stratified according to the auditor. At least three participant homes for each auditor will be selected for on-site data collection, one small, one medium, and one large home. This effort can be considered a follow-up evaluation after the HERS Provider has completed its verification of the HERS rater's work. If any of the homes fail to pass the inspections, then the HERS provider will be contacted to determine if there is a more widespread issue with quality control in the new home HERS rater marketplace. The final sample for telephone verification will encompass a range of participants' homes retrofit under the program at various times throughout the year.

4.2.4 Process Evaluation

Online and Walk Through Audits

ADM will conduct interviews with the Companies' internal program managers and implementation staff across the multi-year evaluation period. The first set of interviews was completed prior to developing the process evaluation plan. ADM will continue to discuss issues with the program staff throughout the evaluation process.

In addition to program staff interviews, surveys of participants and non-participants will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. The first round of surveys has been administered online, and the results presently are being analyzed.

A second aspect of the process evaluation is to determine the relationship between the walk-through and online audit programs and the other energy-efficiency programs offered by the Companies. The audits are intended to provide customers with "a customized comprehensive understanding of the opportunities available for saving energy." In theory, this understanding may induce customers to partake in appropriate energy-efficiency programs offered by the Companies. Quantitatively, one can track the number of audit participants that also participated in other programs. Qualitatively, the evaluation effort will attempt to capture whether the appropriate energy-savings opportunities are identified and described to the customers. For the walk-through audits, ADM will request the data recorded on-site and the recommendations made by the walk-through auditors. Additionally, ADM will accompany auditors for a small sample of walk-through audits.

Whole Building Comprehensive

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a program logic model which will serve as a

visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.2.5 Program Partners and Trade Allies

Online audit – Home Energy Analyzer

The Aclara Software Company owns the tool customers use to complete the home energy audit. Households can identify energy saving opportunities though an audit completed on-line at www.firstenergycorp.com or over the phone with a customer service representative (for customers without access to a computer). This provides customers with information on how their energy bill is impacted by each of the appliances in the home. After an online audit is completed, an energy conservation kit consistent with the home's water heating source is sent to the customer.

Walk Through Home Energy Audit

For a fee of $50, residential customers can receive an in-home energy audit with specific energy efficiency recommendations as well as receiving $50 worth of installed low-cost electric reduction measures (high efficiency lighting and electric water heating saving measures, etc.). Honeywell Utility Solutions is Penn Power's CSP who will conduct walk through home energy audits and complete the installation of energy saving measures. Honeywell may recruit and develop qualified contractors if the participation rate warrants additional auditors.

Whole House Comprehensive Audit

Honeywell is Penn Power's program CSP who will recruit and develop qualified contractors who will use diagnostic equipment to evaluate and ensure that the home is operating at peak efficiency. Honeywell has subcontracted this program to Performance Systems Development (PSD) to benefit from their established network of BPI contractors.

4.2.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-2: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$119,428	$252,202	$1,053,642
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$119,428**	**$252,202**	**$1,053,642**
B.1	Design & Development[1]	$8	$223	$11,471
B.2	Administration[2]	$83,990	$203,832	$315,797
B.3	Management[3]	$8,311	$21,347	$54,460
B.4	Marketing[4]	$1,924	$6,399	$49,243
B.5	Technical Assistance[5]	$530	$9,455	$27,371
B	**Subtotal EDC Implementation Costs**	**$94,764**	**$241,256**	**$458,341**
C	**EDC Evaluation Costs**	$2,204	$18,896	$38,090
D	**SWE Audit Costs**	$0	$4,233	$11,680
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$216,396**	**$516,587**	**$1,561,753**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**
Notes:	[1]Includes cost of EE Expert			
	[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.			
	[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.			
	[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.			
	[5]Includes costs for Tracking and Reporting System			

4.3 Residential Appliance Turn-In Program

Residential customers are eligible for a cash incentive and disposal of up to two large older inefficient appliances (refrigerators or freezers); and two Room Air Conditioners (RAC) per household per calendar year. All units must be working and meet established size requirements.

4.3.1 Program Logic

JACO is the program CSP hired by the Companies to deliver this program. JACO is also the CSP chosen across PA utilities to run this program. JACO's selection provides Penn Power's residential customers a collaborative approach to appliance collections.

JACO tests and confirms an appliance's eligibility for collection at the customer's residence prior to removing the appliance and issuing the incentive. Pre-testing of appliances may result in lower participation as a result of refusing non-working appliances, but will provide better quality control.

Marketing to residential customers is conducted through various media and marketing channels to facilitate a targeted roll-out of the program and efficient collection in targeted areas. The marketing campaign includes a mix of digital media, direct mail, radio, web banners, television and newspaper advertising. In addition Penn Power uses monthly bill inserts to market this program to encourage residential customers to recycle targeted appliances.

Participation by low-income customers will be tracked or estimated to support assessment of equitable treatment of low-income customers. Direct participation by low-income customers will be included in Penn Power's annual report to the PUC.

4.3.2 Program M&V Methodology

The M&V values for this program are based on the energy savings resulting from a customer taking a refrigerator, freezer or RAC out of service. The savings from refrigerator recycling are stipulated in the TRM. The savings from RAC recycling are stipulated in an interim TRM protocol. While RAC energy savings are dependent on location and are mapped using the participant's zip code, RAC demand savings are not location dependent.

Verifying the savings from this program requires telephone verification, with the final sample encompassing a range of participants entering the program at various times throughout the year.

4.3.3 Program Sampling

The sampling approach for this program is a simple random batch-wise sampling on a quarterly basis. Sample sizes will target 90% confidence level and 10% precision. The first sample of 70 participants was drawn from all appliances recycled through May 31, 2010.

4.3.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team has drafted a program logic model which will serve as a visual representation for the program processes. Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys, non-participant surveys, and drop-out surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a document review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.3.5 Program Partners and Trade Allies

JACO is the CSP for Penn Power's Appliance Turn-In Program supporting residential customers. Subcontractors supporting the CSP are Appliance Distribution, Inc., Runyon Saltzman & Einhorn and ITSoft, Inc.

4.3.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-3: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$19,450	$86,575	$195,864
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$19,450**	**$86,575**	**$195,864**
B.1	Design & Development[1]	$2	$102	$5,512
B.2	Administration[2]	$46,230	$188,659	$458,089
B.3	Management[3]	$2,479	$7,783	$20,981
B.4	Marketing[4]	$574	$3,078	$6,544
B.5	Technical Assistance[5]	$93	$742	$2,451
B	**Subtotal EDC Implementation Costs**	**$49,379**	**$200,364**	**$493,577**
C	**EDC Evaluation Costs**	$4,049	$10,555	$20,397
D	**SWE Audit Costs**	$0	$1,969	$5,493
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$72,878**	**$299,463**	**$715,331**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1]Includes cost of EE Expert
[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5]Includes costs for Tracking and Reporting System

4.4 Residential Energy Efficiency HVAC Program

This program provides incentives supporting implementation of contractor-installed HVAC or other eligible systems in existing or new residential buildings. The program involves promoting the sale of high-efficiency, ENERGY STAR® compliant equipment through installation contractors selling to residential customers who are replacing existing home HVAC equipment. The program provides incentives to customers who replace existing or standard HVAC equipment in residential applications with qualifying energy efficient heating and cooling systems.

The program also provides incentives for maintenance (tune-ups) of existing central air conditioners or heat pump equipment and offers an additional incentive toward replacement of furnace fans meeting ENERGY STAR® efficiency guidelines.

4.4.1 Program Logic

Program services will be delivered to customers by qualified local contractors identified by an implementation vendor or manufacturer of such equipment. Contractors will certify the proper sizing and installation of high-efficiency equipment.

Qualifying equipment must meet or exceed ENERGY STAR® standards. Qualified HVAC equipment will include:

- High-efficiency Central Air Conditioning units (CAC)
- High-efficiency Air Source Heat Pumps (ASHP)
- High-efficiency Ground Source Heat Pumps (GSHP)
- CAC maintenance and furnace fan motor replacement meeting ENERGY STAR® guidelines.

Customers will receive rebates for the high efficiency HVAC equipment that is installed or serviced by a participating, qualified contractor.

4.4.2 Program M&V Methodology

Gross Impact Analysis

The evaluation effort will be conducted using separate methodologies for rebated HVAC equipment such as heat pumps, CACs and solar water heaters, and for HVAC maintenance. Details of the methodologies are described in the subsections below. A calculation review is part of all methodologies ensuring that the energy savings and demand reductions for each measure are calculated according to the appropriate protocols in the PA TRM.

Gross Impact for CACs and Heat Pumps

Savings associated with these HVAC equipment types are estimated using a partially deemed approach, with the kWh reduction determined using deemed hours of operation of the equipment for each EDCs service territory and nameplate information from the equipment regarding unit capacities and efficiencies.

For small split HVAC systems, the baseline efficiencies are stipulated in the PA TRM and are in accordance with Federal codes and standards. For any ground source heat pump, the Federal code for air-source heat pumps is used as the baseline.

The 'nameplate' data (e.g. capacity, SEER, EER, COP, HSPF) that provides the basis for deemed savings calculation will be verified through a combination of on-site visits and customer interviews. For units in the sample, enough information will be gathered to cross-check the Air Conditioning, Heating, and Refrigeration Institute (AHRI) certificate.

The expected energy savings and *demand* reduction attributable to solar water heaters have been developed through technical working groups hosted by the PA Statewide Evaluator. The resulting gross impact evaluation protocol will be incorporated into the PA TRM.

Gross Impact for AC Tune Ups

The verification for AC tune-ups includes two components. First, it must be verified that a tune-up actually occurred as claimed in the DSM tracking system. Secondly, it must be verified that the tune-ups are performed according to a consistent and appropriate protocol to ensure that the assumed 10% efficiency improvement stipulated in the TRM is realized. To this end, evaluation team staff will coordinate concurrent visits with randomly chosen trade allies that conduct AC tune ups.

4.4.3 Program Sampling

The sampling will be sufficient to determine this program's gross impact with ±15% relative precision at the 85% confidence level.

The sampling approach for this program is batch-wise stratified random sampling on a quarterly basis. Due to the relatively small number of anticipated ground source heat pumps, it is expected that two strata – heat pumps and CACs - will suffice. The measures within each stratum can include tune-ups or unit replacements.

Solar water heaters *comprise* about 1% of the expected energy savings for the program, but the expected energy impact from a solar water heater is comparable to the energy impact *expected from* a 5-ton heat pump. Therefore, the solar water heaters will be included in the stratum that corresponds to rebates and tune-ups of heat pumps, with the additional goal that, although the program-level energy savings are to be determined with 85/15 confidence/precision, enough solar water heaters will be sampled such that 90/30 confidence/precision will be achieved separately for the impact evaluation of the solar water heater program component.

4.4.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a program logic model which will serve as a visual representation for the program processes. Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys, non-participant surveys, and drop-out surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to *improve program* performance.

4.4.5 Program Partners and Trade Allies

Residential customers may complete an incentive form for contractor-installed qualified high-efficiency heating, ventilation, and air-conditioning equipment and for solar hot water systems in existing or new residential buildings. HVAC tune-up incentives are also available for customers through a network of participating trade allies. Honeywell is Penn Power's program CSP who will recruit and develop trade allies, provide program marketing support, process customer rebate applications, validate applications meet all program requirements, and approve or deny rebate payment.

4.4.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-4: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$39,374	$188,089	$364,369
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$39,374**	**$188,089**	**$364,369**
B.1	Design & Development[1]	$3	$110	$3,377
B.2	Administration[2]	$69,761	$216,598	$337,669
B.3	Management[3]	$2,734	$11,121	$30,181
B.4	Marketing[4]	$623	-$619	$24,184
B.5	Technical Assistance[5]	$103	$803	$2,491
B	**Subtotal EDC Implementation Costs**	**$73,223**	**$228,014**	**$397,902**
C	**EDC Evaluation Costs**	$3,266	$13,100	$19,145
D	***SWE Audit Costs***	$0	$2,128	$5,059
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$115,863**	**$431,331**	**$786,476**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:

[1] Includes cost of EE Expert

[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5] Includes costs for Tracking and Reporting System

4.5 Residential Energy Efficient Products Program

The Energy Efficient (EE) Products program provides financial incentives to customers and support to retailers that sell energy efficient products such as ENERGY STAR® qualified appliances or CFLs. The program includes promotional support, point-of-sale materials, training, promotional events and "up-stream product buy-down" rebates to retailers, distributors or manufacturers for select appliances. The program also includes existing catalog sales channel, and support for community-based initiatives, or other distribution channels that can reliably document effective distribution of energy-efficient products.

4.5.1 Program Logic

The program will encourage community-based initiatives that support documented distribution of energy-efficient products and energy-saving results. Such community-based initiatives include outreach through in-school training, college students, faith-based organizations, and municipal initiatives. The CSP will develop educational materials on the proper use and selection of high efficiency light bulbs, along with product discounts, coupons and price buy-downs to incentivize customers to purchase CFLs, LEDs and other qualifying EE products.

Estimates of low-income participation by county and census will be included in Penn Power's annual report to the PUC.

For the program, the minimum qualifying efficiency ratings are based on current ENERGY STAR® qualified appliances published by the United States Environmental Protection Agency (US EPA). Customer incentives can be in many forms and all are paid by the utility. Incentives can range from $1 to the full purchase price of a light bulb. One incentive will be a mark-down or buy-down program which is a shelf tag, display sticker or end-cap sign recognizing the incentive coming through the utility's program. The discount is paid by the utility to the CFL manufacturer based off point-of-sale purchase data. A second incentive may include coupons through print media, bill inserts, or directly at the point of sale such as shelf-coupon pads redeemable at the register. These incentives would be paid by the utility and redeemable at participating retailers. A third method may include rebate forms that are mailed to a clearing house with rebate checks sent directly to customers. A fourth method may include discounts prepaid at the utility's on-line store which allows customers to shop using the internet.

Dealer incentives and special promotional "events" will be used to encourage sales of high efficiency products, and/or retirement of less-efficient equipment (e.g. Torchiere lamps) through "buy down" first cost and/or promotion of eligible equipment to customers. Customer rebates will be available for selected appliances. Exchange program events for lighting and room air conditioners may also be employed at periodic events.

The message delivered to customers can be accomplished by using a variety of mass marketing tools including utility bill inserts, local newspaper circulars, direct mail, point-of-sale displays at retailers and the utility web site and on-line store. Retailers and manufacturers will also be involved cross-promoting product offers in conjunction with national campaigns like "Earth Day" and "Change a Light, Change the World" programs.

4.5.2 Program M&V Methodology

Gross Impact Analysis

The evaluation effort is conducted using separate methodologies for CFLs and for other appliances, with the details of the methodologies described in the subsections below.

Gross Impact for CFLs

Savings associated with the CFL component are estimated using a deemed approach, with the energy savings and demand reductions taken as deemed in accordance with the TRM. The impact evaluation for the CFL program component will include the following components:

- Review of shipment invoices, including types and quantities of CFLs distributed to participating retailers.
- Review of CSP energy savings and demand reduction calculations.
    - A review of the assumptions regarding the wattages of the baseline incandescent bulbs presumed to be supplanted by CFLs is particularly important

Gross Impact for Appliances

Gross kWh savings for appliances sold through the Residential Energy Efficient Products program are estimated using a deemed approach for measures included in the statewide TRM.

The impact evaluation for the appliance program component will include the following components:

- Verification of proper installation through on-site visits; and
- Review of CSP energy savings and demand reduction calculations
    - Calculations are reviewed to ensure that they are done according to the PA TRM or PA Interim TRM.

A realization rate for the appliance program component is calculated based on the results of the field verification and calculation review.

4.5.3 Program Sampling

The M&V of the upstream CFL program component does not require field work or customer surveys. A census of the calculations on electronic invoices is reviewed to ensure that the energy savings and demand reductions are claimed according to the protocols in the PA TRM.

The sampling approach for the appliance rebate program component is batch-wise simple random sampling on a quarterly basis. A census of the energy and demand savings calculations in the program tracking data are reviewed to ensure that the energy savings and demand reductions are claimed according to the protocols in the PA TRM.

The sample size for review of invoices and supporting documentation will be sufficient to determine gross impact with ±10% relative precision at the 90% confidence level. The sample size for on-site physical verifications will be sufficient to determine gross impact with ±30% relative precision at the 90% confidence level. Although the program realization rate reported herein is for the combined EE Products program, the realization rate for each program component is reported separately to Penn Power.

4.5.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a program logic model which will serve as a visual representation for the program processes. Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?

- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately.

4.5.5 Program Partners and Trade Allies

Residential customers may complete an application form for rebate incentives for purchases of qualified ENERGY STAR® labeled appliances and other energy efficient household products. Honeywell is Penn Power's program CSP who will provide marketing support and training to retailers throughout PA service territory, will process customers' rebate applications, validate that applications meet all program requirements, and approve or deny rebate payment.

4.5.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-5: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$130,908	$384,747	$982,796
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$130,908**	**$384,747**	**$982,796**
B.1	Design & Development[1]	$8	$159	$4,533
B.2	Administration[2]	$191,671	$537,853	$914,659
B.3	Management[3]	$7,702	$19,602	$36,444
B.4	Marketing[4]	$1,717	-$19,960	$28,213
B.5	Technical Assistance[5]	$290	$1,274	$3,633
B	**Subtotal EDC Implementation Costs**	**$201,387**	**$538,929**	**$987,482**
C	**EDC Evaluation Costs**	$901	$10,213	$21,674
D	**SWE Audit Costs**	$0	$2,991	$7,037
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$333,196**	**$936,879**	**$1,998,989**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1] Includes cost of EE Expert
[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5] Includes costs for Tracking and Reporting System

4.6 Residential New Construction Program

This program provides incentives to builders for achieving ENERGY STAR® Homes status, or the Home Energy Rating System program (HERS) associated with a highly energy-efficient home. The program supports implementation of contractor-installed HVAC, solar, or other eligible systems in existing or new residential buildings, as well as measures addressing building shell, appliances and other energy consuming features. This program involves promoting the sale of high-efficiency, ENERGY STAR®

compliant equipment through local builders. Participants can receive a rebate based on calculation of the energy savings related to the home's construction over standard practice.

4.6.1 Program Logic

This program supports the construction of homes exceeding code requirements, and implementation of contractor-installed HVAC, solar, or other eligible systems, as well as high or energy efficient appliances in new or rehab homes.

To qualify for this program, the home must exceed the PA Energy Code (International Energy Conservation Code IECC) requirements by at least 15%. Program services will be delivered to customers by qualified local builders and contractors who demonstrate (through HERS, REM/Rate or other rating tool recognized in the TRM) that the house meets minimum performance energy-savings criteria consistent with that of a highly energy efficient home. Participating contractors or builders receive rebates for achieving high efficiency standards.

Equipment offered to existing residential customers under the other programs are eligible for installation in new homes under this program. The rebate is determined by a formula, based on savings, estimated at 70% of incremental costs.

4.6.2 Program M&V Methodology

The gross impact analysis for the program has four components:

1. Verify that a sample of "prototype" (unoccupied model) homes are being constructed according to the plans by conducting follow-up HERS ratings including duct blaster and blower door tests;,
2. Determine the energy savings and demand reduction for each of the builders' plan types using an engineering analysis;
3. Verify the construction and orientation of a sample of the homes using "drive-by" visits and telephone surveys; and
4. Follow-up review of documentation for any failures that are identified.

The performance of each prototype home will be determined by obtaining the original electronic data file from the builder's simulation software and updating it to match the as-built conditions observed during the on-site data collection and monitoring visit. To account for natural variation in building orientation and to verify major equipment efficiencies of the homes, a simple random sample from the tracking system data will be taken. On-site verification of this sample will determine if the home is constructed or not, and if it is occupied or not, the home's actual cardinal orientation and to verify heating fuel type and outside unit air conditioner/heat pump efficiency. The overall realization rate will be determined by summing up the appropriate quantity of each plan type, for the frequency of orientations found in the on-site site visit. Follow-up telephone interviews may be required in some cases to verify equipment efficiency, if not accessible during the on-site visit.

The energy savings and demand reductions for any energy efficiency components not incorporated into the comprehensive building simulation model and any measures installed through the other residential rebate programs will be determined based upon the methods outlined in those programs.

4.6.3 Program Sampling

The sampling approach for this program is batch-wise stratified random sampling on a quarterly basis, The sample size will be sufficient to determine this program's gross impact with ±15% relative precision at the 85% confidence level. The sample will be updated on a monthly basis and stratified according to

the builder. At least three prototype homes for each builder will be selected for on-site data collection, one small, one medium, and one large home. Our efforts can be considered a follow-up evaluation after the HERS provider has completed its verification of the HERS rater's work. If any of the homes fail to pass the inspections, the HERS provider will be contacted to determine if there is a more widespread issue with quality control in the new home HERS rater marketplace. The final sample for on-site verification will encompass a range of participants homes constructed under the program at various times throughout the year.

4.6.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?
- Which measures are implemented most frequently and what is the incremental cost?
- Which measures are potentially cost effective but not implemented very frequently?
- What are the non-monetary barriers for greater implementation of energy efficiency measures?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.6.5 Program Partners and Trade Allies

The Companies selected Performance Systems Development (PSD) to manage the New Construction Program. The program was launched on October 11, 2010.

Due to positive customer response, approved funding for this program has been fully allocated; therefore, the program was officially closed effective March 7, 2012. Participating builders and energy efficiency raters were notified that applications for rebates not approved by March 7, 2012 are no longer eligible for Phase I program incentives.

4.6.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-6: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$195,700	$373,600	$551,200
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$195,700**	**$373,600**	**$551,200**
B.1	Design & Development[1]	$1	$209	$5,810
B.2	Administration[2]	-$160,664	-$103,477	$16,615
B.3	Management[3]	$1,482	$12,524	$34,786
B.4	Marketing[4]	$344	$5,555	$10,422
B.5	Technical Assistance[5]	$56	$1,406	$4,614
B	**Subtotal EDC Implementation Costs**	**-$158,781**	**-$83,784**	**$72,247**
C	**EDC Evaluation Costs**	$85	$5,537	$11,100
D	**SWE Audit Costs**	$0	$4,099	$9,511
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$37,004**	**$299,452**	**$644,059**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:

[1] Includes cost of EE Expert

[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5] Includes costs for Tracking and Reporting System

4.7 Residential Behavioral Modification and Education

This program will educate residential customers on no-cost or low-cost measures and behaviors that can reduce energy consumption or energy demand and encourage them to adopt a more energy efficient lifestyle. This information will be conveyed through various means, such as: (i) periodic reports to customers that compare their usage with other, comparable customers in the same geographical area; (ii) outreach programs that emphasize the importance of peak load reduction during peak periods and ways to shift energy use away from these periods; (iii) informational materials that provide general conservation tips (such as adjusting the thermostat during heating and cooling periods, turning off lights, shortening showers); (iv) informational materials that provide low-cost energy efficiency tips (such as replacing incandescent lights with CFLs, installing weather stripping, and using power strips); and (v) informational materials that direct a customer to the FirstEnergy website where additional energy savings information and tools are available.

4.7.1 Program Logic

Penn Power contracted with the Behavior Modification and Education CSP to provide its Home Energy Reporting system. That system uses behavioral science and data analytics to drive reductions in residential energy consumption. That system generates measurable energy savings across the country.

The approach is organized around two concepts -- motivating behavior change and providing relevant, targeted information to the motivated consumer. Relying on data supplied by Penn Power, the program translates individual usage patterns into meaningful insights coupled with targeted action steps.

The Home Energy Reports provide recipients with a context for understanding their energy use. This is done by dynamically creating a 100-home comparison group for each house that only compares homes of similar square footage. Home comparison groups are defined by a number of customizable variables including proximity (e.g. within 0.25 miles), census and climate data. Years of behavioral science research have demonstrated that peer-based comparisons are a highly motivating way to present information.

Customers also receive individually targeted savings tips based on their energy usage patterns, housing characteristics, and demographics. Instead of presenting customers with a thick booklet of ideas on how to save energy, the program presents customers with several of the most relevant and immediately actionable suggestions on how to save.

This program provides:

- Context for customers for understanding their energy use, and motivation to reduce their energy consumption;
- Activities to educate customers about low cost/no cost-EE&C behavior and measures that can significantly reduce energy consumption or demand;
- Basic energy conservation education, information and strategies that provide customers with opportunities to reduce energy costs; and
- Education for customers about Penn Power's online resources and energy efficiency and conservation programs

4.7.2 Program M&V Methodology

The gross impact analysis for the program will utilize experimental design to isolate and cleanly evaluate the impact of behavioral messaging. ADM will measure the savings driven by its Home Energy Reports

by using a randomized test and control methodology approved by the Pennsylvania Statewide Evaluator that produces a statistically rigorous measurement of program impact. As the methodology involves analysis of monthly bills, an indirect approach will be utilized to determine the demand impacts during the top 100 hours of summer 2012. This approach will combine participant survey data aimed to identify specific actions taken by customers to reduce energy usage during the summer peak period, with engineering calculations and the monthly billing analysis results.

4.7.3 Program Sampling

Customer engagement will occur through random selection of program participants and a statistically significant non-contact control group. The control group customers will never be contacted or influenced by any contact with this study. It is expected that monthly billing data will be available for all participants and for the selected control group.

4.7.4 Process Evaluation

Prior to program launch, the ADM/Tetra Tech team will conduct the first set of interviews with the Companies' EE&C program staff. Following the interviews, the ADM, internal staff and contractors will draft a program logic model which will serve as a visual representation for the program processes. As the programs near launch, additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Once the program is launched, participant surveys, non-participant surveys, and drop-out surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. If the goals are appropriate, the process evaluation will identify specific best practices that may help the Companies reach the program goals

4.7.5 Program Partners and Trade Allies

Honeywell is Penn Power's program CSP responsible for program implementation. Honeywell has subcontracted to Opower to partner together to deliver this program. Opower is an energy efficiency and smart grid software company that uses behavioral science to motivate consumers to reduce their energy bills. Honeywell and Opower will work together to select program participants, develop and send reports to customers, develop program website, develop low cost / no cost efficiency tips, and track and report energy savings.

4.7.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-7: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants			
A.2	EDC Incentives to Trade Allies			
A	**Subtotal EDC Incentive Costs**			
B.1	Design & Development[1]			
B.2	Administration[2]			
B.3	Management[3]			
B.4	Marketing[4]			
B.5	Technical Assistance[5]			
B	**Subtotal EDC Implementation Costs**			
C	**EDC Evaluation Costs**			
D	**SWE Audit Costs**			
E	**Participant Costs**			
	Total Costs			
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

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Notes:

[1] Includes cost of EE Expert

[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5] Includes costs for Tracking and Reporting System

4.8 Residential Multi-Family Program

This program leverages audit services already being provided by the Pennsylvania Housing Finance Agency (PHFA) by marketing the program to property managers and owners who have participated and completed the PHFA audits. By leveraging other resources available through PHFA, the program targets other property managers and owners who have not participated in the PHFA audits. The program also targets tenants in these multifamily buildings by directly providing an energy conservation kit at no cost to tenants. For purposes of this report, and consistent with the Companies' February 5, 2010 EE&C filing, all energy savings and demand reduction results for this program are reported in the Residential sector.

4.8.1 Program Logic

The objective of this program is to capture electric energy savings available in common lighting areas (hallways, exit signs, laundry facilities, exterior lighting, etc.). Building upon the PHFA audit findings, this program provides common area interior and exterior lighting measures for multifamily buildings, plus installation of CFLs and LED exit signs in common areas. These retrofit services will be provided by electrical contractors, hired directly by the property owners/managers, as the program is being marketed to these trade allies.

In addition to providing lighting measures for common areas, this program also targets tenant areas. Tenants who pay for utilities as part of their rent in multifamily buildings often have little motivation to save electricity since they do not benefit directly, unless landlords pass on the energy savings through reduced rent. Tenants who pay electricity directly have more motivation since they are likely to experience lower electric bills. Regardless of whether a tenant is master metered or a customer of record, they will be offered a conservation kit consisting of CFLs plus two (2) LED night lights at no cost to the tenant.

Tenants that qualify as low-income customers receiving energy conservation kits will be estimated and tracked to support assessment of equitable treatment of low-income customers. This estimate will be based on the information provided by the property manager/owner as to what percentage of tenants in a given building qualify as low-income tenants.

4.8.2 Program M&V Methodology

The program effectively has two components: the first targets common areas while the second targets tenant dwellings. The common areas program component has the same list of eligible measures and the same CSP as the general C&I equipment program. Therefore, the impact evaluation of this program component will be subsumed in the C&I equipment evaluation[18]. The tenant CFL program component will be treated as a separate program, and will have its own population, sample, and realization rate. The energy savings and demand reductions for the CFLs are deemed in the PA TRM. The gross impact analysis for the energy conservation kits will determine the installation rate for the CFLs through a combination of on-site visits and telephone interviews.

[18] If this program component has higher than anticipated implementation , a separate sample sufficient in number to achieve 90/10 confidence/precision will be required.

4.8.3 Program Sampling

Sampling procedures to be followed in the present program year are summarized below for each program component.

Common Areas Program Component: The program component that targets common areas will be combined with the general C/I equipment program.

Tenants Program Component:

The sampling approach for this program is simple random sampling on a quarterly basis. The sample size will be sufficient to determine this program's gross impact with ±15% relative precision at the 85% confidence level. The sampling unit will be at the individual residence level within each complex. Given the homogenous nature of the program, and our interest to utilize the most efficient sample size necessary, we have estimated a coefficient of variation for the program and will determine our sample size accordingly. We have utilized data from the Companies' online audit kit conservation program, to estimate a linear relationship between the RR for a program and the CV. The in-service rate of 84% is deemed in the PA TRM, and we use that rate to estimate a CV of 0.26. However, we use a CV of 0.5 and calculate the necessary sample size as 23 sites per EDC[19]. A simple random sample of 23 sites will be drawn on an annual basis.

4.8.4 Process Evaluation

The contract for the tenant area program component has recently been awarded to PowerDirect (PD). The evaluation team reviewed the scope of work and the program delivery proposal for the tenant area program component. Interviews with the Companies' key program staff occurred in early October 2010. Following the interviews, the evaluation team will draft a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.8.5 Program Partners and Trade Allies

Penn Power has launched the Multifamily Program for Common Areas using SAIC to administer this program. SAIC is responsible for marketing to multifamily buildings property managers/owners by conducting direct contact with these customers, email solicitations and using Penn Power account representative leads. SAIC is also marketing this program through trade allies – e.g., electrical contractors – and by targeting different associations of property owners and managers. The Companies have hired PD to administer a Multifamily Program for Tenant Areas. PD completed necessary upfront work to identify multifamily properties in the Companies' service territories and have contacted property managers and provided information about the program. Beginning in January through March, PD shipped energy conservation kits to properties that agreed to participate in the program. Starting in

[19] This is calculated according to the PA TRM Formula: N = ((Z_value*CV)/Precision Level)^2

April 2011 through present, PD is working with property managers having received kits to gather pertinent information needed for program evaluation.

4.8.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-8: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$60	$592	$57,652
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$60**	**$592**	**$57,652**
B.1	Design & Development[1]	$0	$9	$529
B.2	Administration[2]	$0	$3,353	$48,117
B.3	Management[3]	$183	$632	$1,746
B.4	Marketing[4]	$42	$254	$458
B.5	Technical Assistance[5]	$7	$62	$210
B	**Subtotal EDC Implementation Costs**	**$233**	**$4,309**	**$51,061**
C	**EDC Evaluation Costs**	$10	$3,768	$7,055
D	**SWE Audit Costs**	$0	$167	$486
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$303**	**$8,835**	**$116,254**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1] Includes cost of EE Expert
[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5] Includes costs for Tracking and Reporting System

4.9 Residential Low-Income Programs

WARM Extra Measures Program

This program is an expansion of, and enhancement to the existing comprehensive Low-Income Usage Reduction Program (LIURP), known as WARM, that provides additional electric energy savings measures and services to income-eligible customers. Expanded measures include an average of four (4) additional

CFLs (including specialty CFLs such as candelabras, 3-way, outdoor, recessed and flood lights), LED night lights, furnace whistles and smart power strips.

WARM Plus Program
This program exceeded its EE&C Plan targets through 2013 and due to minimal funds remaining in the budget, the program was closed at the end of January 2012. Any remaining funds budgeted for this program will be used for ongoing EM&V and reporting.

Low-Income, Low-Use Program
This program is for low-income customers that do not meet the minimum usage of 600 kWh/month to qualify for the WARM program. These customers received CFLs, faucet aerators, LED nightlights, a furnace whistle and energy education materials.

4.9.1 Program Logic

WARM Extra Measures Program
This program offers two ways for customers to realize increased electric energy savings. The Act 129 Program opens the door for customers to reduce phantom load from electronics and entertainment equipment in their homes by allowing installation of smart power strips. It also allows for the installation of an average of four (4) CFLs in addition to the WARM/LIURP Program maximum of twelve (12) per home through Act 129 funding.

Program services are delivered by existing WARM Community Based Organizations (CBOs) and private contractors, coordinated or augmented by additional private vendors as needed to enhance the capacity of existing agencies and contractors.

The WARM/LIURP program is managed by the Companies' internal staff with outside agencies and private contractors performing comprehensive whole-house energy audits, energy education and direct installation of cost-effective electricity-saving measures.

WARM Plus Program
This program provides additional electric energy savings measures and whole-house services to an additional 25 percent of lower income households above the existing WARM/LIURP program participant goals.

Program services are delivered by existing WARM CBOs and private contractors, coordinated or augmented by additional private vendors as needed to enhance the capacity of existing agencies and contractors.

The program provides whole-house energy conservation services such as those provided by the WARM Program: air sealing, insulation, electric water heat and cooling reduction measures, appliance testing and possible replacement, replacement lighting, smart power strips, energy education, and other cost-effective custom measures. The program will also increase availability of subsidized energy efficiency services to 25 percent more customers. There is no payment required by the customer for the installation of these measures.

Low-Income, Low-Use Program
Hundreds of applications are received each year from low-income customers who use less electricity than the WARM program usage eligibility threshold of 600 kWh per month. This program will allow Penn Power to target this previously unserved group for energy savings by providing them with CFLs, faucet aerators, LED night lights, a furnace whistle and energy education materials.

4.9.2 Program M&V Methodology

WARM Extra Measures Program
The Statewide Evaluator (SWE) conducted site visits in August and September 2011 to verify that the Smart Power Strips, LED Night Lights and CFLs were installed, where required. Site visits were also conducted for WARM Plus and Low-Income Low-Use customers. Visits were to verify that complete weatherization measures were installed, where applicable, for WARM Plus customers and to verify which of the items sent to the Low-Income Low-Use customers via kits through the mail, were installed.

ADM conducted site visits in July and August, 2010, to verify that the Smart Power Strips were installed in accordance with the assumptions used in the ex-ante savings calculation (e.g., the power strips control, on average, 25-30W of quiescent loads), and that the additional CFLs were installed in areas that correspond to hours of usage in the TRM.

WARM Plus Program
The ex-ante energy savings for the Warm Plus program are based on the impact evaluation of the 2009 WARM program, by job type,[20] which employed a statistical billing analysis.

Low-Income, Low-Use Program
The gross impact analysis for the energy conservation kits has two components:

1. Determine the installation rate for the measures in the conservation kits.
2. Determine the average energy savings and demand reductions for the measures in the kits.

The installation rate will be determined through a combination of on-site visits and telephone interviews. The energy savings and demand reductions for the measures are stipulated in the PA TRM. The impact evaluation effort will review the tracking data and energy savings calculations to ensure that the energy savings are reported in accordance to the TRM.

4.9.3 Program Sampling

WARM Extra Measures Program
The Statewide Evaluator (SWE) conducted site visits in August and September 2011 to verify that the Smart Power Strips, LED Night Lights and CFLs were installed, where required, in Penn Power customers' homes.

The energy savings and demand reductions for the measures distributed by the program are deemed in the TRM. The sample size will be sufficient to determine gross impact with ±15% relative precision at the 85% confidence level. The evaluation results for the first program year indicated that there is a good correspondence between the claimed and verified savings for this program. A stratified sample of 20 sites should be sufficient to achieve this level of precision.

[20] The three job types are as follows: Electric heat jobs are weatherization jobs that direct at least $250 to reduce space heating energy usage for electrically heated homes; electric water heat jobs direct at least $25 to reduce water heating energy usage for homes that have electric water heaters, and electric baseload jobs, which may include refrigerator/freezer replacement and lighting retrofits.

WARM Plus Program

The sampling approach for this program component is batch-wise simple random sampling on a quarterly basis. The sample size will be approximately ten sites. This field work was conducted mainly to give feedback regarding program implementation to the Companies – the gross energy and demand impacts are determined through billing analysis.

Low-Income, Low-Use Program

The sampling approach for this program component is batch-wise simple random sampling on a quarterly basis. The sample size will be sufficient to determine gross impact with ±10% relative precision at the 90% confidence level for telephone interviews, and ±30% relative precision at the 90% confidence level for on-site visits.

4.9.4 Process Evaluation

The Statewide Evaluator (SWE), along with the EE&C program administrator, conducted site visits in August and September 2011 to verify that the Smart Power Strips, LED Night Lights and CFLs were installed, where required. Site visits were also conducted for WARM Plus and Low-Income Low-Use customers. Visits were to verify complete weatherization measures were installed, where applicable, for WARM Plus customers and to verify which of the items sent to the Low-Income Low-Use customers via kits through the mail, were installed.

These visits provided an opportunity for customers to ask questions; to provide feedback; to provide comments regarding the program contractors; and for program contractors to simply engage in conversation with the customers.

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the efficiency of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance. The recent field work has also resulted in suggestions that will increase the evaluability of the Warm Extra Measures program. To facilitate future impact evaluations, the Companies have now directed participating contractors to mark all CFLs installed under the Warm Extra Measures program.

4.9.5 Program Partners and Trade Allies

WARM Extra Measures Program

Program services are delivered by existing Low Income Usage Reduction Program (WARM/LIURP) non-profit agencies, private contractors and subcontractors. Three (3) non-profit agencies expanded their production capacity and additional private contractors were hired to increase capacity to meet the targets in Penn Power's EE&C Plan. Penn Power

The Companies' internal staff manages the program. Agencies and private contractors perform comprehensive whole house energy audits and direct installation of cost-effective electricity-saving measures.

Following is a list of program partners (Implementation Contractors):

WARM Extra Measures

ACTION Housing, Inc. (Quality Assurance Inspectors)
Bill Busters, Inc.
CMC Energy Services
Community Action Partnership of Mercer County
EIC/Comfort Home, Inc.
Northwest PA Weatherization

WARM Plus Program

Program services are delivered by existing Low Income Usage Reduction Program (WARM/LIURP) non-profit agencies, private contractors and subcontractors. Three (3) non-profit agencies expanded their production capacity and additional private contractors were hired to increase capacity to meet the targets in Penn Power's EE&C Plan. Penn Power

The program is managed internally by the Companies' internal staff with outside agencies and private contractors performing comprehensive whole house energy audits and direct installation of cost-effective electricity-saving measures.

Following is a list of program partners (Implementation Contractors):

WARM Plus

ACTION Housing, Inc. (Quality Assurance Inspectors)
CMC Energy Services
EIC/Comfort Home, Inc.

Low-Income, Low-Use Program

A large number of WARM applicants do not meet the minimum usage requirement of 600 kWh per month necessary to participate in certain WARM program offerings. In order to meet these customers' needs, the Low-Income Low-Use program shipped kits of CFLs, faucet aerators, LED night lights, a furnace whistle and energy education material to select low-income Penn Power customers. The Companies' internal staff participated in pre-bid meetings with interested vendors. Internal staff also compared vendor samples, reviewed proposals and met with the top three vendors. A contract award was made August 10, 2010 to PD. The program launched in October 2010, and kits were shipped in October and November 2010 and February 2011 at no direct cost to customers.

4.9.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-9: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$79,262	$223,205	$730,633
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$79,262**	**$223,205**	**$730,633**
B.1	Design & Development[1]	$2	$63	$6,174
B.2	Administration[2]	$4,064	$20,903	$39,404
B.3	Management[3]	$5,840	$19,075	$63,195
B.4	Marketing[4]	$0	$0	$917
B.5	Technical Assistance[5]	$864	$1,900	$11,191
B	**Subtotal EDC Implementation Costs**	**$10,770**	**$41,942**	**$120,881**
C	**EDC Evaluation Costs**	$1,598	$12,541	$24,419
D	**SWE Audit Costs**	$0	$1,211	$4,321
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$91,630**	**$278,898**	**$880,254**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1]Includes cost of EE Expert
[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5]Includes costs for Tracking and Reporting System

4.10 Commercial / Industrial Small Sector Equipment Program

Equipment

This program provides for the implementation of cost effective, high efficiency measures through the Nonstandard Lighting, Heating Ventilating and Air-conditioning, Motors & Drives, Specialty Equipment and Custom incentive programs.

Energy Audit and Technical Assessment
In addition to providing information and a list of auditors, this program funds all the CFL installations for this class of customers. Since all lighting is marketed via the Nonstandard lighting incentives, this program will be combined with the Commercial and Industrial (C/I) Equipment program for reporting purposes.

4.10.1 Program Logic

Equipment
The program is designed to reduce the first-cost of high-efficiency equipment thereby encouraging the adoption of this equipment in lieu of standard at the end-of-the-useful-life measures, or as early replacement. The savings and budget from the Energy Audit and Technical Assessment Program will be combined with this program for reporting purposes.

Incentives are provided to offset a portion of the incremental technology costs ("capital costs") of high efficiency equipment as well as technical support when needed. Penn Power currently supports high efficiency measures targeting existing buildings, new construction, and building addition for small commercial and industrial customers.

Incentives will be set at a schedule of payments per unit to address the incremental cost of commercially available energy efficient technology for each equipment category, when compared to the commonly available replacement.

Custom measures will be rebated based upon an analysis of potential energy savings on a case by case basis.

Energy Audit and Technical Assessment
A list of auditor and technical assessment providers has been posted on the program website. The CFLs have been promoted through Penn Power's Non-Standard Lighting Incentive Program.
Penn Power will support and track participation by governmental customers in a separate program.

4.10.2 Program M&V Methodology

Equipment
This program implements both custom measures and prescriptive measures. The impact evaluation categorizes all measures rebated under the C/I, and Governmental/Non-Profit programs as either custom or prescriptive. As a first step, then, the measures rebated under this program are combined with either the custom or prescriptive populations of measures. The M&V methodologies for each population are briefly described below.

Custom Measures
Custom measures are evaluated according to the custom measures protocol specified in the PA Statewide Evaluator's Audit Plan. A custom measure protocol is created for each new custom measure. The protocol, once reviewed and accepted by the Statewide Evaluator, will be used to determine both

ex-ante and ex-post savings[21]. In most cases, a site visit will be required to gather data, either by inspection or monitoring, to inform the calculations in the custom measure protocol.

Prescriptive Measures
Prescriptive measures for the C/I sector are typically partially deemed according to protocols in the PA TRM. The impact evaluation activities for such measures involve on-site inspections to verify that the measures are installed and commercially operable, and that the associated energy savings and demand reductions are calculated appropriately according to the relevant protocol in the PA TRM.

Energy Audit and Technical Assessment
Gross Impact Analysis
The CFLs are marketed and processed in the Standard Lighting Incentive program. As such, the gross impact of the CFL installations is covered under the impact evaluation of the C/I Equipment program.

4.10.3 Program Sampling

Equipment
Custom Measures
For custom measures, the general rule is that the census of projects is evaluated. However, for specific, homogenous populations (e.g. one particular ESCO is implementing the same measure on 11 branches of a chain retailer), sampling will be employed if possible.

Prescriptive Measures
The sampling approach for this program is batch-wise stratified sampling. The samples are stratified by measure type (e.g. HVAC, Lighting) and by claimed energy savings. Batch-wise samples are drawn on a quarterly basis. The number of sample sites will be sufficient to achieve ±10% relative precision at the 90% confidence level separately for the prescriptive and the custom samples. Based on the results of program year's evaluation, and on the current list of rebate applications, approximately 30 on-site visits will be required to achieve the desired relative precision.

Energy Audit and Technical Assessment
The impact evaluation sample for this program is subsumed into the sample for the C/I Equipment program. This program will fall under the prescriptive component of the C/I Equipment program.

4.10.4 Process Evaluation

Equipment
In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a process evaluation plan and a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

[21] The impact evaluation team may determine savings that differ from the ex-ante calculations - even while using the same protocol – if the on-site data collected for impact evaluation purposes is inconsistent with the assumptions and corresponding values of parameters used in the *ex-ante* energy savings estimation.

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

Energy Audit and Technical Assessment

A primary aspect of this program's process evaluation is to determine the relationship between the Audit program and the other energy efficiency programs offered by Penn Power. The audits are intended to provide customers with "a customized comprehensive understanding of the opportunities available for saving energy." In theory, this understanding may induce customers to partake in appropriate energy efficiency programs offered by Penn Power. Quantitatively, one can track the number of audit participants that also participated in other Penn Power energy efficiency programs. Qualitatively, the evaluation effort will attempt to capture whether the appropriate energy savings opportunities are identified and described to the customers. Additionally, the evaluation team will interview the Small C/I audit vendor, the Large C/I audit contractors (trade allies), participant customers and program non-participants to address the following issues:

- Degree to which the trade ally is integrated into professional organizations;
- How the trade ally heard about the program;
- Concerns the trade ally might have about the program;
- Motivation for participating in the program;
- Technologies and practices used by the trade ally prior to hearing about or using the program;
- Extent to which the trade ally recommends the technologies and practices to other customers;
- Extent of uptake of technologies and practices by nonparticipating customers;
- Degree to which participants promote the program with customers;
- How the trade ally "sells" the program;
- Factors that make it difficult to sell or implement the program;
- Customer reactions to the technologies and practices, and to the program;
- Effectiveness of program promotional activities and program operations;
- Quality of interactions with the implementation contractor;
- Extent to which the trade ally has talked to other trade allies about the program; and
- Recommendations for program improvement

Evaluating the Procedures for Administering and Managing the Program

In addition to the above interviews, evaluation team members will conduct interviews with the Companies' internal staff to assess program implementation and processes including but not limited to the following issues:

- Program goals and objectives;
- Development and structure of the program;
- Program activities, their outputs, and their expected outcomes;
- Internal processes and communications;
- Marketing, communication, and outreach activities;
- Step-by-step description of customer participation for each program track;
- Roles of staff members and adequacy of resources;
- Relation to other programs;
- Customer awareness of and satisfaction with program services;
- Reasons for lack of program participation;

- Data collection and tracking practices;
- Processing of projects and payments;
- Quality control and quality assurance; and
- Effectiveness of the program design, including strengths and weaknesses.

Information from the above interviews will be used to construct a "logic model" for the program. Developing a logic model for the program will help to identify gaps in the program, to develop measures for assessing progress, to identify critical issues that need attention, and to communicate with stakeholders about the program and their outcomes.

4.10.5 Program Partners and Trade Allies

Equipment

SAIC is the CSP that administers this program and has conducted face to face presentations, email solicitations using Penn Power account representative leads. The program marketing strategy will utilize end-use technologies such as lighting, HVAC, motors and drives rather than just C&I Equipment. Using electronic tools (e.g., website, email-distributions, trade shows and case studies) SAIC has and will continue to market directly to customers. In addition, there has been a special emphasis on trade and professional organizations using event sponsorship, membership and speaking opportunities.

Energy Audit and Technical Assessment

SAIC was contracted to administer this program and has sent out a Request For Qualifications (RFQ) to gather interested energy auditors for all nonresidential sectors. This list has been posted on the program website. In addition, an application form has been posted on the website. Customers will contract with these vendors directly and it is the expectation that audits will generate additional applications to other programs. SAIC will track original audit activities that culminate into equipment installations.

4.10.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-10: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$41,970	$85,444	$1,316,021
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$41,970**	**$85,444**	**$1,316,021**
B.1	Design & Development[1]	$10	$247	$13,083
B.2	Administration[2]	$57,080	$164,164	$370,891
B.3	Management[3]	$5,122	$15,653	$54,568
B.4	Marketing[4]	$0	$0	$0
B.5	Technical Assistance[5]	$368	$1,913	$6,093
B	**Subtotal EDC Implementation Costs**	**$62,580**	**$181,977**	**$444,634**
C	**EDC Evaluation Costs**	$1,207	$22,128	$36,588
D	**SWE Audit Costs**	$0	$4,692	$13,205
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$105,757**	**$294,240**	**$1,810,448**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1] Includes cost of EE Expert
[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5] Includes costs for Tracking and Reporting System

4.11 Commercial / Industrial Large Sector Demand Response Program – CSP Mandatory and Voluntary Curtailment Program

For C/I, as well as government sector customers, the Companies will solicit registration for curtailment service providers ("DR-CSPs") registering load in PJM programs. DR-CSPs will provide services to register and dispatch customer curtailable load during the Company's targeted hours of 100 hours of highest demand. The Plan includes a 50 hour Mandatory Program, and a Voluntary Program. The Companies

developed an RFP supporting a pilot for the mandatory program offering firm pricing for commitments for peak load reductions during the top 100 hours, and a voluntary program offering supplemental payment for economic market transactions during the top 100 hours. The Company contracted in July 2011 with two DR-CSPs to deliver services on a pilot basis for the summer of 2011 under the Mandatory Program. RFPs for 2012 are planned.

4.11.1 Program Logic

The Companies will enter into an agreement with qualified DR-CSPs selected on a first come first serve basis up to the contracted MW of peak load reductions for annual performance periods. Annual performance periods will address the 2011/12, and 2012/13 PJM planning years.

Estimated MW required from this program to meet Act 129 minimum requirements will depend on the MW achieved through energy-efficiency (EE) programs. Actual MW registered for the summer of 2012 will be subject to adjustment (up or down) based on actual EE program performance through 2011, as well as experience under this program in the first two years.

4.11.2 Program M&V Methodology

Following the selection of load control technologies, the Companies will verify that demand reduction targets are being achieved consistent with PJM Economic Program protocols in effect during the summer of 2012. A "realization rate" will be developed based on review of PJM DR program transactions and compliance with the accepted CBL protocols. That realization rate will be used to assess the Companies' DR program impacts for Act 129 compliance during the top 100 hours. Details of how the realization rate will be calculated will be determined through evaluation technical working groups, with the participation of the EDCs, the EDC evaluators, and the PA Statewide Evaluator.

4.11.3 Program Sampling

A stratified random sample will be constructed for the program. The number of sample sites will be sufficient to quantify the demand reduction with ±10% relative precision at the 90% confidence level. If the population size is sufficiently small, the census of participants will be evaluated.

4.11.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a process evaluation plan and a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?

Participant surveys and non-participant surveys will help to assess the efficiency of the program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.11.5 Program Partners and Trade Allies

Two DR-CSPs were selected to support the launch of the 2011 Commercial/Industrial Demand Response program. RFPs for 2012 are planned.

4.11.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-11: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$85,500	$133,000	$133,036
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$85,500**	**$133,000**	**$133,036**
B.1	Design & Development[1]	$22	$535	$3,590
B.2	Administration[2]	$0	$0	$0
B.3	Management[3]	$16,049	$40,660	$75,964
B.4	Marketing[4]	$0	$0	$0
B.5	Technical Assistance[5]	$842	$4,296	$11,558
B	**Subtotal EDC Implementation Costs**	**$16,914**	**$45,492**	**$91,111**
C	**EDC Evaluation Costs**	$1,277	$4,878	$11,373
D	**SWE Audit Costs**	$0	$10,129	$19,837
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$103,691**	**$193,499**	**$255,358**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:

[1]Includes cost of EE Expert

[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5]Includes costs for Tracking and Reporting System

4.12 Commercial / Industrial Large Sector Performance Contracting/Equipment Program

Performance Contracting and Equipment
Large commercial and industrial (and other non-residential) customers may elect to secure Demand Side Management/Energy Efficiency (DSM/EE) services through an Energy Services Company (ESCO) that will identify opportunities, implement retrofits and attain payment through the savings generated by the project over time.

Industrial Motors and Variable Speed Drives (VSD)
This program is designed to encourage Penn Power's commercial and industrial customers to:

1. Upgrade their existing motors to NEMA Premium® motors when switching out old motors due to breakdowns and or programmed replacements; and,
2. Install variable speed drives on motors that do not always operate at the same speed.

The variable speed drive program is designed for commercial and industrial energy customers whose motors are utilized for increased operating hours and have a higher variability of loads on the system. Applications with low variability of loads where the motor runs at constant speed are not good candidates for a variable-speed drive.

4.12.1 Program Logic

Performance Contracting and Equipment
This program is designed to reduce the first-cost of high-efficiency equipment thereby encouraging the adoption of this equipment in lieu of standard at the end-of-the-useful-life measures, or as early replacement. The program may be delivered through qualified ESCO contractors. The same incentive programs available to small sector customers, the Nonstandard Lighting, Heating Ventilating and Air-conditioning, Motors & Drives, Specialty Equipment and Custom, apply to this sector. Incentives can be provided to the ESCO or to the customer as directed by the customer.

Industrial Motors and VSD
This program seeks to provide an incentive for Penn Power's customers when motors are upgraded to NEMA Premium® motors and/or when customers install a new variable speed drive. The incentives offered by Penn Power are provided to help initiate momentum among its customers.

Incentives will be available to customers and through motors distributors as a rebate per unit replaced on a first come first serve basis and will be limited to Penn Power's motor upgrade budget.

To qualify for an incentive, the motor(s) must operate a minimum of 3,000 hrs/yr. Individual incentives per motor start at $20 for a 1HP. The variable-speed drive incentive is a flat rate of $30 per motor horsepower controlled.

The program is being administered by SAIC.

4.12.2 Program M&V Methodology

Performance Contracting and Equipment

This program implements both custom measures and prescriptive measures. The impact evaluation categorizes all measures rebated under the C/I, and Governmental/Non-Profit programs as either custom or prescriptive. As a first step, then, the measures rebated under this program are combined with either the custom or prescriptive populations of measures. The M&V methodologies for each population are briefly described below.

Custom Measures

Custom measures are evaluated according to the custom measures protocol specified in the PA Statewide Evaluator's Audit Plan. A custom measure protocol is created for each new custom measure. The protocol, once reviewed and accepted by the Statewide Evaluator, will be used to determine both ex-ante and ex-post savings[22]. In most cases, a site visit will be required to gather data, either by inspection or monitoring, to inform the calculations in the custom measure protocol.

Prescriptive Measures

Prescriptive measures for the C/I sector are typically partially deemed according to protocols in the PA TRM. The impact evaluation activities for such measures involve on-site inspections to verify that the measures are installed and commercially operable, and that the associated energy savings and demand reductions are calculated appropriately according to the relevant protocol in the PA TRM.

Industrial Motors and VSD

The Motors and Variable Speed Drives program is evaluated separately from all other C/I programs. This is done in part because the impact evaluation team expects to include all or most of the projects in the M&V sample. This program implements both custom measures and prescriptive measures. The M&V methodologies for each type of measure are briefly described below.

Custom Measures

Custom measures are evaluated according to the custom measures protocol specified in the PA Statewide Evaluator's Audit Plan. The PA statewide evaluator has created a custom measure protocol for motors and drives in non-HVAC applications. The protocol will be used to determine both ex-ante and ex-post savings. In most cases, pre-installation and post-installation monitoring will be required to inform the calculations in the custom motors and drives protocol.

Prescriptive Measures

Prescriptive measures for the motors and drives program are partially deemed according to protocols in the PA TRM. Most of the prescriptive measures are expected to target HVAC loop pumps and fans. The impact evaluation activities for such measures involve on-site inspections to verify that the measures are installed and commercially operable, and that the associated energy savings and demand reductions are calculated appropriately according to the relevant protocol in the PA TRM.

[22] The impact evaluation team may determine savings that differ from the ex-ante calculations - even while using the same protocol – if the on-site data collected for impact evaluation purposes is inconsistent with the assumptions and corresponding values of parameters used in the *ex-ante* energy savings estimation.

4.12.3 Program Sampling

Performance Contracting and Equipment

Custom Measures

For custom measures, the general rule is that the census of projects is evaluated. However, EM&V sampling will be employed for "small" custom projects (e.g. those that comprise the bottom 20% of custom project energy savings).

Prescriptive Measures

The sampling approach for this program is batch-wise stratified sampling. The samples are stratified by measure type (e.g. HVAC, Lighting) and by claimed energy savings. Batch-wise samples are drawn on a quarterly basis. The number of sample sites will be sufficient to achieve ±10% relative precision at the 90% confidence level separately for the prescriptive and the custom samples. Based on the results of program year's evaluation, and on the current list of rebate applications, approximately 30 on-site visits will be required to achieve the desired relative precision.

Industrial Motors and VSD

ADM will employ sampling for the prescriptive measures (e.g. motors and drives on secondary HVAC loops), but will attempt a census of custom measures. The sampling scheme will be adequate to report overall verified savings with ±15% relative precision at the 85% confidence level.

4.12.4 Process Evaluation

Performance Contracting and Equipment

The evaluation team has conducted the first set of the Companies' program staff interviews in May and June, 2010. Following the interviews, the evaluation team has drafted a process evaluation plan and a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

Industrial Motors and VSD

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a process evaluation plan and a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.12.5 Program Partners and Trade Allies

Performance Contracting and Equipment

SAIC is the CSP who is administering this program and is responsible for marketing by conducting face to face presentations, email solicitations and using Penn Power account representative leads. The program marketing strategy will utilize end-use technology such as lighting and HVAC rather than just C&I Equipment. Using electronic tools (e.g., website, email-distribution, trade shows and case studies) SAIC has marketed directly to customers and their performance contractors. In addition, there has been a special emphasis on trade and professional organizations using event sponsorship, membership and speaking opportunities.

Industrial Motors and VSD

SAIC is the CSP that administers this program and has conducted face to face presentations, email solicitations and using Penn Power account representative leads. This program will be marketed to both commercial and industrial customers using tools such as a website, email-based distribution lists, trade shows and case studies. In addition, there will be special promotions to motor equipment suppliers.

4.12.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-12: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$0	$58,965	$1,290,093
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$0**	**$58,965**	**$1,290,093**
B.1	Design & Development[1]	$9	$159	$19,484
B.2	Administration[2]	$16,173	$50,324	$217,424
B.3	Management[3]	$4,638	$12,247	$52,456
B.4	Marketing[4]	$0	$0	$0
B.5	Technical Assistance[5]	$357	$1,332	$4,598
B	**Subtotal EDC Implementation Costs**	**$21,177**	**$64,063**	**$293,962**
C	**EDC Evaluation Costs**	$8,906	$67,963	$128,529
D	**SWE Audit Costs**	$0	$2,962	$12,068
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$30,082**	**$193,953**	**$1,724,653**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1] Includes cost of EE Expert
[2] Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3] Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4] Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5] Includes costs for Tracking and Reporting System

4.13 Governmental / Non-Profit Street Lighting Program

The Street Lighting program is offered to municipalities regardless of ownership of the street lights. This segment of the government program will seek to convert existing street lights to high pressure sodium units. In addition to street lights conversion, this program also provides an option to municipalities to upgrade existing outdoor area lights to high pressure sodium units and traffic and pedestrian signals to LEDs.

4.13.1 Program Logic

This program provides incentives to offset the incremental technology costs ("capital costs") for energy efficient retrofit projects.

4.13.2 Program M&V Methodology

The energy savings and demand reductions attributable to LED traffic and pedestrian signals are deemed in the PA TRM. Currently, municipal street lighting upgrades are not included in the TRM. However, it is likely that a deemed hours of operation for municipal lighting will be approved by the SWE and PA PUC. In this context, a deemed savings approach to impact evaluation is appropriate. The energy savings will be the product of the wattage reduction from the old mercury vapor lamps to the new high pressure sodium lamps, and the annual hours of operation. The impact evaluation of these measures will involve verification of installation and operation, coupled with verification that energy savings calculations are performed in accordance with the appropriate protocols in the PA TRM. Large projects will also be subject to on-site baseline verification.

4.13.3 Program Sampling

The sampling approach for this program is batch-wise stratified sampling, updated on a quarterly basis. The stratification is based on the total ex-ante kWh savings with municipal retrofit projects as sampling units. The number of sampled sites will be sufficient to quantify the energy savings and demand reduction with ±15% relative precision at the 85% confidence level.

4.13.4 Process Evaluation

The evaluation team has conducted the first set of the Companies' program staff interviews in May and June, 2010. Following the interviews, the evaluation team has drafted a process evaluation plan and a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- Is the marketing plan likely to reach the targeted customers?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. The process evaluation will identify specific best practices that may help the Companies improve program performance.

4.13.5 Program Partners and Trade Allies

More than 98% of streetlights that must be changed under this program are Penn Power owned. Penn Power plans to use internal resources or a combination of internal resources and external contractors to accomplish the conversion. Information pertaining to this program will be delivered to customers who own streetlights by contracted CSPs and Penn Power area managers or customer service representatives. Similarly, municipalities will receive information about the outdoor area lights and traffic and pedestrian signals change out options through the contracted CSP and Penn Power area managers. Also, the contracted CSP is marketing this program to electrical contractors and lighting distributors.

4.13.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-13: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$0	$5,576	$180,902
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$0**	**$5,576**	**$180,902**
B.1	Design & Development[1]	$1	$23	$1,019
B.2	Administration[2]	$0	$1,369	$30,011
B.3	Management[3]	$314	$1,100	$3,646
B.4	Marketing[4]	$0	$0	$0
B.5	Technical Assistance[5]	$26	$172	$542
B	**Subtotal EDC Implementation Costs**	**$341**	**$2,663**	**$35,217**
C	**EDC Evaluation Costs**	$40	$5,519	$8,475
D	**SWE Audit Costs**	$0	$442	$1,158
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$381**	**$14,200**	**$225,752**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:

[1]Includes cost of EE Expert

[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5]Includes costs for Tracking and Reporting System

4.14 Governmental / Non-Profit Program

This program targets a small sector of customers on special non-profit rates. They include volunteer fire companies, ambulance associations, some schools and municipal customers. This sector is eligible for all the incentive programs the small or large C/I sector is eligible for, including the Nonstandard Lighting, Heating Ventilating and Air-conditioning, Motors & Drives, Specialty Equipment and Custom. In April 2011, the Companies' received approval to enhance the program to include an opt-in CFL kit

offering. Customers enrolled in this program are eligible to receive a single CFL kit or multiple CFL kits at no cost.

4.14.1 Program Logic

This program provides incentives to offset the incremental technology costs ("capital costs") for energy efficient retrofit projects.

4.14.2 Program M&V Methodology

This program offers the same set of measures as the general C/I program and is administered by the same conservation service provider, SAIC, and managed by the Companies' internal staff that also manage the C/I program. As such, the impact evaluation effort for this program is combined with the impact evaluation effort for the C/I Equipment program.

4.14.3 Program Sampling

The impact evaluation sample for this program is subsumed into the sample for the C/I Equipment program. However, the program participants are pooled into a separate "Government/Non-Profit" stratum. This stratum's impacts will be reported with ±15% relative precision at the 85% confidence level.

4.14.4 Process Evaluation

In May and June, 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. Following the interviews, the evaluation team drafted a process evaluation plan and a program logic model which will serve as a visual representation for the program processes (subject to periodic review and update). Additional interviews with program staff will seek information on researchable issues such as:

- Are IT processes in place and effective?
- Are program roles, hierarchies, and contracts clearly stated?
- How is the marketing plan specifically targeting the decision makers in this sector?

Participant surveys and non-participant surveys will help to assess the value of the marketing program, to characterize the customer experience, and to identify any barriers to customer participation. In addition to interviews, a literature review will help to determine if the program goals were set appropriately. With many aspects of the program being identical to the general C/I Equipment program, the evaluation team recognizes that the outreach to the government and non-profit sectors is this program's key characteristic. The process evaluation will focus on this program's outreach and marketing effort, since many of the other issues, such as IT system processes, will be addressed in the process evaluations of the C/I Equipment program. The process evaluation will identify specific best practices that may help the Companies to improve program performance.

4.14.5 Program Partners and Trade Allies

SAIC is administering this program and is responsible for marketing by conducting face to face presentations, email solicitations and using Penn Power personnel to solicit participation. This program has been marketed primarily to county and local government, nonprofit and institutional customers. SAIC has marketed directly to customers using tools such as the website, email-based distribution lists, trade shows and case studies. Additionally, SAIC is responsible for shipping the CFL kits directly to customers.

4.14.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-14: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$0	$164	$9,899
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$0**	**$164**	**$9,899**
B.1	Design & Development[1]	$0	$1	$48
B.2	Administration[2]	$1,903	$5,049	$19,560
B.3	Management[3]	$30	$68	$175
B.4	Marketing[4]	$0	$0	$0
B.5	Technical Assistance[5]	$2	$10	$28
B	**Subtotal EDC Implementation Costs**	**$1,935**	**$5,128**	**$19,810**
C	**EDC Evaluation Costs**	$4	$24	$159
D	**SWE Audit Costs**	$0	$22	$56
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$1,938**	**$5,338**	**$29,924**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:

[1]Includes cost of EE Expert

[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.

[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.

[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.

[5]Includes costs for Tracking and Reporting System

4.15 Governmental / Remaining Non-Profit Programs

The Federal Facilities Program supports identifying energy savings opportunities to expedite the Federal Government agencies taking action. In April 2011, the Companies' received approval to enhance the program to offer the same incentives to federal customers as those being offered to other C/I customers as well as to include an opt-in CFL kit offering. Customers enrolled in this program are eligible to receive single or multiple CFL kits at no cost.

Governmental Buildings and Schools program will help better identify energy savings opportunities and expedite their implementation. The CSP would provide diagnostic assistance, technical support and rebates incentives necessary for school districts to install high-efficiency measures.

County and local buildings, including schools, will be provided energy audits free of charge up to $2,000 as a way to increase the proportional share of saving received from governmental customers. In April 2011, the Companies' received approval to enhance the program to include an opt-in CFL Kit offering. Customers enrolled in this program are eligible to receive a single or multiple CFL kits at no cost.

4.15.1 Program Logic

The program provides for the implementation of cost effective, high efficiency measures through a CSP for local and state government buildings, as well as for institutional customers. This sector is eligible for the same incentives as the small or large C/I sector (the Standard Lighting, Nonstandard Lighting, Heating Ventilating and Air-conditioning, Motors & Drives, Specialty Equipment and Custom).

4.15.2 Program M&V Methodology

This program offers the same set of measures as the general C/I program and is administered by the same conservation service provider, SAIC, and managed by the Companies' internal staff that also manage the C/I program. As such, the impact evaluation effort for this program is combined with the impact evaluation effort for the C/I Equipment program.

4.15.3 Program Sampling

The impact evaluation sample for this program is consolidated with the sample for the C/I Equipment program. However, the program participants are separated into a "Government/Non-Profit" stratum. This stratum's impacts will be reported with ±15% relative precision at the 85% confidence level.

4.15.4 Process Evaluation

As with the process evaluation for the Governmental /Non-Profit Program, in May and June 2010, ADM conducted the first set of interviews with the Companies' EE&C program staff. The initial interviews have resulted in a logic model and process evaluation work plan. Additional interviews, particularly with program participants and non-participants will help to identify the value of the marketing and outreach campaign, and the needs and constraints of the target market.

4.15.5 Program Partners and Trade Allies

SAIC was contracted to administer this program and is responsible for marketing by conducting face to face presentations, email solicitations and using the Companies" Governmental Affairs representative leads.

This program has been marketed primarily to county and local government, nonprofit and institutional customers. SAIC will continue to market directly to customers using tools such as the website, email-distribution, trade shows and case studies. Additionally, SAIC is responsible for shipping the CFL kits directly to customers.

4.15.6 Program Finances

A summary of the project finances are presented in the following table:

Table 4-15: Summary of Program Finances:

		IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	$4,759	-$3,807	$457,331
A.2	EDC Incentives to Trade Allies	$0	$0	$0
A	**Subtotal EDC Incentive Costs**	**$4,759**	**-$3,807**	**$457,331**
B.1	Design & Development[1]	$5	$116	$1,589
B.2	Administration[2]	$19,978	$61,179	$171,767
B.3	Management[3]	$2,414	$6,308	$14,980
B.4	Marketing[4]	$0	$0	$0
B.5	Technical Assistance[5]	$202	$923	$2,540
B	**Subtotal EDC Implementation Costs**	**$22,599**	**$68,526**	**$190,876**
C	**EDC Evaluation Costs**	$369	$2,287	$5,909
D	**SWE Audit Costs**	$0	$2,190	$4,562
E	**Participant Costs**	$0	$0	$0
	Total Costs	**$27,727**	**$69,196**	**$658,678**
F	**Annualized Avoided Supply Costs**	$0	$0	$0
G	**Lifetime Avoided Supply Costs**	$0	$0	$0
	Total Lifetime Economic Benefits	**$0**	**$0**	**$0**
	Portfolio Benefit-to-Cost Ratio	**0.00**	**0.00**	**0.00**

Notes:
[1]Includes cost of EE Expert
[2]Costs paid to Conservation Service Providers (CSPs) for program implementation. To define in the TRC Technical Working Group.
[3]Costs incurred to manage the CSPs and programs. To define in the TRC Technical Working Group.
[4]Includes umbrella marketing costs for programs. Marketing completed by the CSPs are included in Administration.
[5]Includes costs for Tracking and Reporting System