

# **Quarterly Report to the Pennsylvania Public Utility Commission**

**For the period  
December 2009 to February 2010**

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

Prepared by the Pennsylvania Electric Company  
April 23<sup>rd</sup> 2010

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## 1 Overview of Portfolio

Act 129 of 2008 (Act 129) mandated energy savings and demand reduction goals for the largest electric distribution companies (EDC) in Pennsylvania. Pursuant to Act 129 goals and requirements, energy efficiency and conservation (EE&C) plans were submitted by each EDC and approved by the Pennsylvania Public Utility Commission (PUC). This quarterly report is intended to document the progress and effectiveness of the EE&C plan for Pennsylvania Electric Company (Penelec or Company).

Highlights through the 3<sup>rd</sup> Quarter, Program Year 1:

- The “Program Year to Date (PYTD)”<sup>1</sup> reported<sup>2</sup> gross energy savings is 8 MWh. The compliance annual energy savings target for May 31<sup>st</sup> 2011 is 143,993 MWh and the compliance annual energy savings target for May 31<sup>st</sup> 2013 is 431,979 MWh.
- The PYTD reported gross demand reduction<sup>3</sup> is 0.00 MW. The compliance annual demand reduction target for May 31<sup>st</sup> 2013 is 108 MW.
- The PYTD reported participation is 90 participants.
- The PYTD reported reduction in emissions is 7 short tons of CO<sub>2</sub>.<sup>4</sup>

Consistent with the PUC’s Opinions and Orders in Docket Nos. M-2009-2092222, M-2009-2112952 and M-2009-2112956, FirstEnergy’s Pennsylvania EDCs, Metropolitan Edison Company, Pennsylvania Electric Company and Pennsylvania Power Company (collectively, the Companies) launched several programs and are currently in the process of launching additional programs through a combination of in-house utility staff and competitively selected Conservation Service Providers (CSP). The selected CSPs have been approved by the Commission and placed on its CSP Registry, and the Companies’ contracts with the selected CSPs have been approved by the Commission’s staff. Penelec’s current timeline for program implementation is shown in Section 5 of this report.

The Companies have selected SAIC, Inc. (SAIC) to serve as program manager for commercial/industrial/government programs. The Companies’ contract with SAIC to manage the following programs was approved by the Commission’s staff on December 18, 2009:

1. lighting;
2. equipment rebates;
3. custom programs;
4. motors and VSD; and,
5. energy audit/technology assessment

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<sup>1</sup> “Program Year to Date” is defined as the timeframe from the start of the Program Year, defined as June 1<sup>st</sup>, to the end of the reporting period.

<sup>2</sup> “Reported” values are unverified, and include projects where (1) the energy conservation measures (ECMs) are installed, (2) the ECMs are commercially operational, and (3) the rebates have been issued.

<sup>3</sup> The term “Demand Reduction” as used henceforth in the quarterly report refers to the “Summer Peak Demand Reduction” as defined in the TRM.

<sup>4</sup> Emissions estimated by assuming 1845.16 lb/MWh of CO<sub>2</sub> for annual non-baseload output emissions in Pennsylvania (EPA eGRID2007, Year 2005, <http://cfpub.epa.gov/egridweb/index.cfm>).

The Companies have selected Honeywell International, Inc. (Honeywell) to serve as program manager for residential programs. The Companies' contract with Honeywell to manage the following programs was approved by the Commission's staff on January 7, 2010:

1. on-site home energy audits;
2. energy efficient HVAC;
3. energy efficient products; and,
4. whole building comprehensive.

The Companies have selected JACO Environmental, Inc. (JACO) to manage the residential appliance turn-in program. The Commission's staff approved the Companies' contract with JACO on December 18, 2009.

The Companies have selected Aclara Software, Inc. (Aclara) as the vendor to support the on-line energy audits for both residential and small commercial/industrial/government customers. The Commission's staff approved the Companies' contract with Aclara on February 12, 2010.

In addition, the Companies are using the services of Building Performance Institute (BPI) certified contractors to perform measure installation for the low income WARM programs (i.e., WARM Plus, WARM extra measures). Program services are delivered by existing Low Income Usage Reduction Program non-profit agencies, private contractors and subcontractors. Additional private contractors were hired to increase capacity to meet the Company's EE&C Plan. Internal Company staff manages the program. Agencies and private contractors perform comprehensive whole house energy audits and direct installation of all cost-effective electricity-saving measures. In addition, low income customers are eligible to participate in other residential programs.

Because the Company is still working diligently to launch its approved programs, it is too early to determine program risks as well as potential program changes. The key issue for the Company at this early stage of Act 129 compliance is to continue to launch the Commission approved programs and to monitor their progress and results.

### **Portfolio Measurement and Valuation (M&V) Status**

The Company has selected ADM Associates, Inc. (ADM) as the M&V contractor. As of February 28, 2010, the M&V actions have addressed start-up activities including the following initiatives:

- Initial "Kick Off" meeting between Company staff and ADM staff and contractors;
- Assignment of impact and process evaluation responsibilities among ADM staff;
- Review of ex-ante calculations, assumptions and evaluation protocols in Technical Reference Manual (TRM);
- Review of ex-ante calculations, assumptions and evaluation protocols for certain measures that are not in the TRM;
- Review of the measures and program delivery mechanisms in the Company's plan portfolios;
- Review of the Statewide Evaluator's (SWE) Audit Plan;
- Drafting of impact evaluation plans for all programs that will start by May 1 2010;
- Review of Total Resource Cost (TRC) calculation protocols set forth by the PUC;
- Review of the Company's TRC calculation for Custom C/I project rebate qualification;
- Review of rebate forms and data collection requirements for programs that are nearing launch ;

- Review of energy efficiency program tracking protocols and systems;
- Initial data requests and status updates on energy efficiency projects;

These activities have ensured that the M&V contractor is poised to begin evaluation work as soon as programs launch.

## 1.1 Summary of Portfolio Impacts

A summary of the total impacts for the portfolio through the 3<sup>rd</sup> Quarter, Program Year 1 is presented in Table 1-1 and Table 1-2.

**Table 1-1: Portfolio Reported Impacts through the 3<sup>rd</sup> Quarter, Program Year 1**

	Incremental Quarterly Reported Gross Impact <sup>[a]</sup>	PYTD Reported Gross Impact <sup>[b]</sup>	Estimated for Projects In Progress <sup>[c]</sup>	PYTD Total Anticipated <sup>[d]</sup>
Total Energy Savings (MWh)	8	8	0	8
Total Demand Reduction (MW)	0.0	0.0	0.0	0.0
TRC Benefits (\$) <sup>[e]</sup>	Not Reported	Not Reported	Not Reported	Not Reported
TRC Costs (\$) <sup>[f]</sup>	Not Reported	Not Reported	Not Reported	Not Reported
TRC Benefit-Cost Ratio <sup>[g]</sup>	Not Reported	Not Reported	Not Reported	Not Reported
CO <sub>2</sub> Emissions Reduction (Short Tons)	7	7	0	7
<b>NOTES:</b>				
[a] Implementer reported unverified results from projects completed during the reporting quarter only. A project is complete when (1) the energy conservation measure (ECM) has been installed, (2) the ECM is commercially operable, and (3) the rebate check has been issued.				
[b] Implementer reported unverified results from projects completed during the Program Year.				
[c] Projects in progress (i.e. application submitted but project not complete as defined by note [a]) and under PUC approved protocols.				
[d] Total for "PYTD Reported Gross Impact" and "Estimated for Projects in Progress", as defined by notes [a] and [b].				
[e] Avoided supply costs, including the reduction in costs of electric energy, generation, transmission, and distribution capacity, and natural gas valued at marginal cost for periods when there is a load reduction. Subject to TRC Order. TRC Benefits reporting requirement is waived for the 3Q1Y quarterly report.				
[f] Costs paid by the program administrator and participants plus the increase in supply costs for any period when load is increased. Subject to TRC Order.				
[g] Subject to TRC Order. TRC Benefit-Cost Ratio reporting requirement is waived for the 3Q1Y quarterly report.				

A summary of total evaluation adjusted impacts for the portfolio is presented in Table 1-2.

**Table 1-2: Portfolio Total Evaluation Adjusted Impacts through the 3<sup>rd</sup> Quarter, Program Year 1**

	PYTD Reported Gross Impact	Interim PYTD Verified Impact <sup>[a]</sup>	Interim PYTD Net Impact <sup>[b]</sup>
Total Energy Savings (MWh)	8	N/A	N/A
Total Demand Reduction (MW)	0.0	N/A	N/A
TRC Benefits (\$) <sup>[c]</sup>	Not Reported	N/A	N/A
TRC Costs (\$) <sup>[d]</sup>	Not Reported	N/A	N/A
TRC Benefit-Cost Ratio	Not Reported	N/A	N/A
CO <sub>2</sub> Emissions Reduction (Short Tons)	7	N/A	N/A
<b>NOTES:</b>			
[a] Adjusted by applying realization rate determined by independent EM&V contractor to the Portfolio PYTD Reported Gross Impact, which is calculated by aggregating Program PYTD Verified Impacts. Program PYTD Verified Impacts are calculated by multiplying Program PYTD Reported Gross Impacts by program realization rates. Interim realization rates for the Program Year and impacts are to be used for quarterly reports, i.e. realization rates are to be calculated with available data. Interim realization rates are used to calculate Interim PYTD Verified Impacts. Interim realization rates are based on realization rate calculations from a portion of the sample anticipated over the entire Program Year. No verification work has occurred through the 3 <sup>rd</sup> quarter of program year one.			



[b] Adjusted by applying net-to-gross ratio to the Portfolio PYTD Verified Impact, which is calculated by aggregating Program Net Impacts. Program Net Impacts are calculated by multiplying Program PYTD Verified Impacts by program Net-to-Gross ratios. Interim net-to-gross ratios for the Program Year are to be used for quarterly reports, i.e. net-to-gross ratios are to be calculated with available data. Net-to-Gross ratio is 1.0 for Program Year 1.

[c] Avoided supply costs, including the reduction in costs of electric energy, generation, transmission, and distribution capacity, and natural gas valued at marginal cost for periods when there is a load reduction. Subject to TRC Order. TRC Benefits reporting requirement is waived for the 3Q1Y quarterly report.

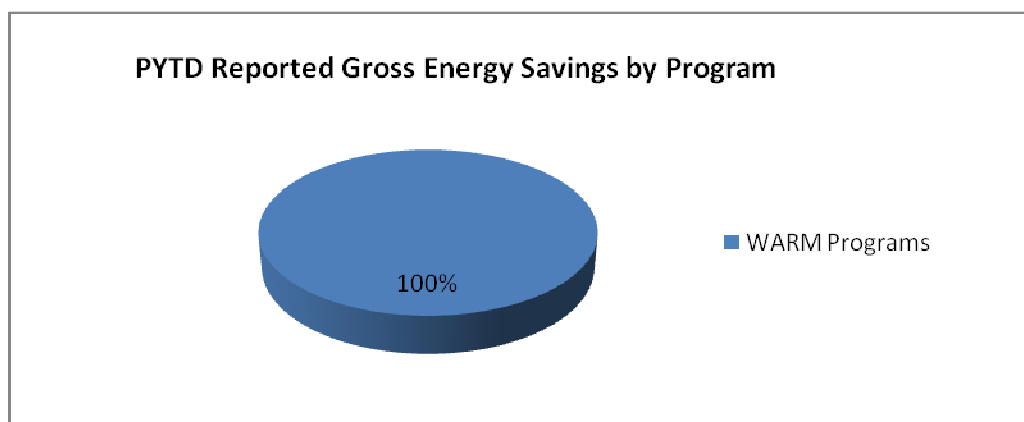
[d] Costs paid by the program administrator and participants plus the increase in supply costs for any period when load is increased. Subject to TRC Order.

[e] Subject to TRC Order. TRC Benefit-Cost Ratio reporting requirement is waived for the 3Q1Y quarterly report.

## 1.2 Summary of Energy Impacts by Program

A summary of the reported energy savings by program is presented in Figure 1-1.

Figure 1-1: PYTD Reported Gross Energy Savings by Program through the 3<sup>rd</sup> Quarter, Program Year 1



A summary of energy impacts by program through the 3<sup>rd</sup> Quarter, Program Year 1 is presented in Table 1-3 and Table 1-4.

Table 1-3: Participation and Reported Gross Energy Savings by Program through the 3<sup>rd</sup> Quarter, Program Year 1

Program	Incremental Quarterly Participants <sup>[a]</sup>	PYTD Participants <sup>[b]</sup>	Incremental Quarterly Reported Gross Impact <sup>[c]</sup> (MWh)	PYTD Reported Gross Impact <sup>[d]</sup> (MWh)
Demand Reduction	0	0	0	0
Home Energy Audits	0	0	0	0
Appliance Turn-In	0	0	0	0
EE HVAC	0	0	0	0
EE Products	0	0	0	0
New Construction	0	0	0	0
Whole Building	0	0	0	0
Multiple Family	0	0	0	0
WARM Programs	90	90	8	8
Energy Audit and Technical Assessment	0	0	0	0
C/I Equipment Program	0	0	0	0

C/I Performance Contracting/Equipment	0	0	0	0
Industrial Motors and VSD	0	0	0	0
PJM Demand Response	0	0	0	0
Street lighting	0	0	0	0
Non-Profit	0	0	0	0
Remaining Government/Non-Profit	0	0	0	0
<b>Total</b>	90	90	8	8

**NOTES:**

[a] Number of participants completing projects during the reported quarter.

[b] Number of participants completing projects during the program year.

[c] Implementer reported unverified results from projects completed during the reporting quarter. A project is complete when (1) the energy conservation measure (ECM) has been installed, (2) the ECM is commercially operable, and (3) the rebate check has been issued.

[d] Implementer reported unverified results from projects completed during the Program Year.

Table 1-4: Reported Gross Energy Savings by Program through the 3<sup>rd</sup> Quarter, Program Year 1

Program	Estimated for Projects In Progress <sup>[a]</sup> (MWh)	PYTD Total Anticipated <sup>[b]</sup> (MWh)	Program Year Energy Savings Target <sup>[c]</sup> (MWh)	% of Goal Anticipated <sup>[d]</sup>
Demand Reduction	0	0	47	0%
Home Energy Audits	0	0	3,598	0%
Appliance Turn-In	0	0	2,985	0%
EE HVAC	0	0	321	0%
EE Products	0	0	5,841	0%
New Construction	0	0	860	0%
Whole Building	0	0	879	0%
Multiple Family	0	0	88	0%
WARM Programs	0	8	543	1%
Energy Audit and Technical Assessment	0	0	2,363	0%
C/I Equipment Program	0	0	5,941	0%
C/I Performance Contracting/Equipment	0	0	1,736	0%
Industrial Motors and VSD	0	0	688	0%
PJM Demand Response	0	0	0	0%
Street lighting	0	0	329	0%
Non-Profit	0	0	185	0%
Remaining Government/Non-Profit	0	0	3,317	0%
<b>Total</b>	0	8	29,722	0%

**NOTES:**

[a] Projects in progress (i.e. application submitted but project not complete as defined above) and under PUC approved protocols.

[b] Total for "PYTD Reported Gross Impact" and "Estimated for Projects in Progress", as defined in above table.

[c] Predicted energy savings target for whole Program Year, as filed in EDC EE&C plan.

[d] Ratio of PYTD Total Anticipated to 2011 Energy Savings Target.

A summary of evaluation adjusted energy impacts by program is presented in Table 1-5.

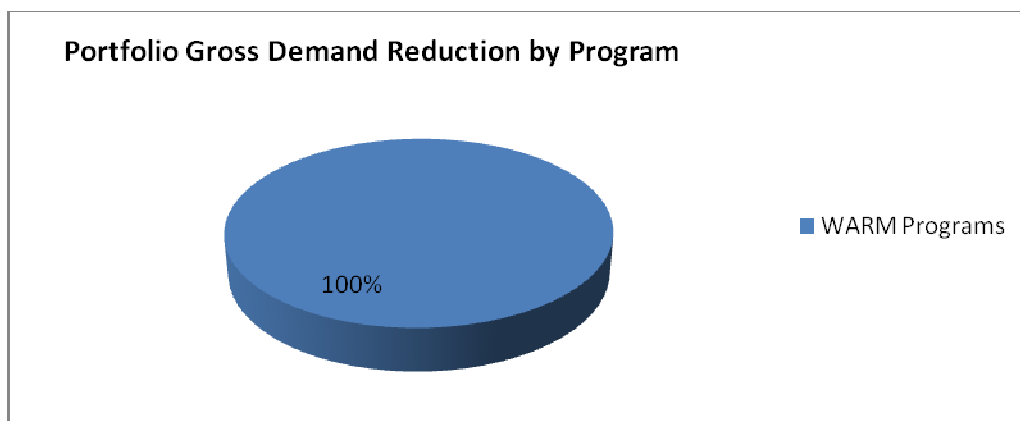
**Table 1-5: Adjusted Gross Energy Savings by Program through the 3<sup>rd</sup> Quarter, Program Year 1**

<b>Program</b>	<b>PYTD Reported Gross Impact (MWh)</b>	<b>Interim Verified Realization Rate<sup>[a]</sup></b>	<b>Interim PYTD Verified Impact<sup>[a]</sup> (MWh)</b>	<b>Net-to-Gross Ratio<sup>[b]</sup></b>	<b>PYTD Net Impact<sup>[b]</sup> (MWh)</b>
Demand Reduction	0	N/A	N/A	1	N/A
Home Energy Audits	0	N/A	N/A	1	N/A
Appliance Turn-In	0	N/A	N/A	1	N/A
EE HVAC	0	N/A	N/A	1	N/A
EE Products	0	N/A	N/A	1	N/A
New Construction	0	N/A	N/A	1	N/A
Whole Building	0	N/A	N/A	1	N/A
Multiple Family	0	N/A	N/A	1	N/A
WARM Programs	8	N/A	N/A	1	N/A
Energy Audit and Technical Assessment	0	N/A	N/A	1	N/A
C/I Equipment Program	0	N/A	N/A	1	N/A
C/I Performance Contracting/Equipment	0	N/A	N/A	1	N/A
Industrial Motors and VSD	0	N/A	N/A	1	N/A
PJM Demand Response	0	N/A	N/A	1	N/A
Street lighting	0	N/A	N/A	1	N/A
Non-Profit	0	N/A	N/A	1	N/A
Remaining Government/Non-Profit	0	N/A	N/A	1	N/A
<b>Total</b>	<b>8</b>	<b>N/A</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>
<b>NOTES:</b>					
[a] Adjusted by applying realization rate determined by independent EM&V contractor. As of 3 <sup>rd</sup> Quarter, PY1, no verification work has occurred and the results reported herein are not verified impacts. Verification work is occurring presently. PYTD Verified Impacts calculated by multiplying PYTD Reported Gross Impacts by EM&V realization rates. Interim realization rates for the Program Year and impacts are to be used for quarterly reports, i.e. realization rates are to be calculated with available data. Interim realization rates are used to calculate Interim PYTD Verified Impacts. Interim realization rates are based on realization rate calculations from a portion of the sample anticipated over the entire Program Year.					
[b] Adjusted by applying net-to-gross ratio. PYTD Net Impacts calculated by multiplying PYTD Verified Impacts by net-to-gross ratios. Net-to-Gross ratio is 1.0 for Program Year 1.					

### 1.3 Summary of Demand Impacts by Program

A summary of the reported demand reduction by program is presented in Figure 1-2.

**Figure 1-2: Reported Demand Reduction by Program through the 3<sup>rd</sup> Quarter, Program Year 1**



A summary of demand reduction impacts by program through the 3<sup>rd</sup> Quarter, Program Year 1 is presented in Table 1-6 and Table 1-7.

**Table 1-6: Participation and Reported Gross Demand Reduction by Program through the 3<sup>rd</sup> Quarter, Program Year 1**

Program	Incremental Quarterly Participants <sup>[a]</sup>	PYTD Participants <sup>[b]</sup>	Incremental Quarterly Reported Gross Impact <sup>[c]</sup> (MW)	PYTD Reported Gross Impact <sup>[d]</sup> (MW)
Demand Reduction	0	0	0.00	0.00
Home Energy Audits	0	0	0.00	0.00
Appliance Turn-In	0	0	0.00	0.00
EE HVAC	0	0	0.00	0.00
EE Products	0	0	0.00	0.00
New Construction	0	0	0.00	0.00
Whole Building	0	0	0.00	0.00
Multiple Family	0	0	0.00	0.00
WARM Programs	90	90	0.00	0.00
Energy Audit and Technical Assessment	0	0	0.00	0.00
C/I Equipment Program	0	0	0.00	0.00
C/I Performance Contracting/Equipment	0	0	0.00	0.00
Industrial Motors and VSD	0	0	0.00	0.00
PJM Demand Response	0	0	0.00	0.00
Street lighting	0	0	0.00	0.00
Non-Profit	0	0	0.00	0.00
Remaining Government/Non-Profit	0	0	0.00	0.00
<b>Total</b>	<b>90</b>	<b>90</b>	<b>0.00</b>	<b>0.00</b>
<b>NOTES:</b>				
[a] Number of participants completing projects during the reported quarter.				

[b] Number of participants completing projects during the program year.

[c] Implementer reported unverified results from projects completed during the 3<sup>rd</sup> Quarter. A project is complete when (1) the energy conservation measure (ECM) has been installed, (2) the ECM is commercially operable, and (3) the rebate check has been issued.

[d] Implementer reported unverified results from projects completed during the Program Year.

**Table 1-7: Reported Gross Demand Reduction by Program through the 3<sup>rd</sup> Quarter, Program Year 1**

Program	Estimated for Projects In Progress <sup>[a]</sup> (MW)	PYTD Total Anticipated <sup>[b]</sup> (MW)	Program Year Demand Reduction Target <sup>[c]</sup> (MW)	% of Goal Anticipated <sup>[d]</sup>
Demand Reduction	0.00	0.00	0.98	0%
Home Energy Audits	0.00	0.00	0.34	0%
Appliance Turn-In	0.00	0.00	0.43	0%
EE HVAC	0.00	0.00	0.30	0%
EE Products	0.00	0.00	0.67	0%
New Construction	0.00	0.00	0.65	0%
Whole Building	0.00	0.00	0.22	0%
Multiple Family	0.00	0.00	0.01	0%
WARM Programs	0.00	0.00	0.06	2%
Energy Audit and Technical Assessment	0.00	0.00	0.67	0%
C/I Equipment Program	0.00	0.00	2.13	0%
C/I Performance Contracting/Equipment	0.00	0.00	0.59	0%
Industrial Motors and VSD	0.00	0.00	0.02	0%
PJM Demand Response	0.00	0.00	0.00	0%
Street lighting	0.00	0.00	0.00	0%
Non-Profit	0.00	0.00	0.05	0%
Remaining Government/Non-Profit	0.00	0.00	0.81	0%
<b>Total</b>	0.00	0.00	7.92	0%

**NOTES:**

[a] Projects in progress (i.e. application submitted but project not complete as defined above) and under PUC approved protocols.

[b] Total for "PYTD Reported Gross Impact" and "Estimated for Projects in Progress", as defined in above table.

[c] Predicted demand reduction target for whole Program Year, as filed in EDC EE&C plan.

[d] Ratio of PYTD Total Anticipated to 2013 Demand Reduction Target.

A summary of evaluation adjusted demand impacts by program is presented in Table 1-8.

**Table 1-8: Adjusted Gross Demand Reduction by Program through the 3<sup>rd</sup> Quarter, Program Year 1**

Program	PYTD Reported Gross Impact (MW)	Interim Verified Realization Rate <sup>[a]</sup>	Interim PYTD Verified Impact <sup>[a]</sup> (MW)	Net-to-Gross Ratio <sup>[b]</sup>	PYTD Net Impact <sup>[b]</sup> (MW)
Demand Reduction	0.00	N/A	N/A	1	N/A
Home Energy Audits	0.00	N/A	N/A	1	N/A

Appliance Turn-In	0.00	N/A	N/A	1	N/A
EE HVAC	0.00	N/A	N/A	1	N/A
EE Products	0.00	N/A	N/A	1	N/A
New Construction	0.00	N/A	N/A	1	N/A
Whole Building	0.00	N/A	N/A	1	N/A
Multiple Family	0.00	N/A	N/A	1	N/A
WARM Programs	0.00	N/A	N/A	1	N/A
Energy Audit and Technical Assessment	0.00	N/A	N/A	1	N/A
C/I Equipment Program	0.00	N/A	N/A	1	N/A
C/I Performance Contracting/Equipment	0.00	N/A	N/A	1	N/A
Industrial Motors and VSD	0.00	N/A	N/A	1	N/A
PJM Demand Response	0.00	N/A	N/A	1	N/A
Street lighting	0.00	N/A	N/A	1	N/A
Non-Profit	0.00	N/A	N/A	1	N/A
Remaining Government/Non-Profit	0.00	N/A	N/A	1	N/A
<b>Total</b>	<b>0.00</b>	<b>N/A</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>

**NOTES:**  
 [a] Adjusted by applying realization rate determined by independent EM&V contractor. As of 3<sup>rd</sup> Quarter, PY1, no verification work has occurred and the results reported herein are not verified impacts. Verification work is occurring presently. PYTD Verified Impacts calculated by multiplying PYTD Reported Gross Impacts by EM&V realization rates. Interim realization rates for the Program Year and impacts are to be used for quarterly reports, i.e. realization rates are to be calculated with available data. Interim realization rates are used to calculate Interim PYTD Verified Impacts. Interim realization rates are based on realization rate calculations from a portion of the sample anticipated over the entire Program Year.  
 [b] Adjusted by applying net-to-gross ratio. PYTD Net Impacts calculated by multiplying PYTD Verified Impacts by net-to-gross ratios. Net-to-Gross ratio is 1.0 for Program Year 1.

### 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 Technical Resource Manual (TRM) measure realization rates are driven by differences in the number of installed measures. Partially deemed TRM measure<sup>5</sup> 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.

The realization rates for each program are presented in Table 1-9.

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

Program	PYTD Sample Participants <sup>[a]</sup>	Program Year Sample Participant Target <sup>[b]</sup>	Interim Realization Rate for kWh <sup>[c]</sup>	Confidence and Precision For kWh <sup>[c]</sup>	Interim Realization Rate for kW <sup>[c]</sup>	Confidence and Precision for kW <sup>[c]</sup>
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<sup>5</sup> TRM measures with stipulated values and variables.

<b>PORTFOLIO</b>	0	N/A	N/A	N/A	N/A	N/A
Demand Reduction	0	68 <sup>[g]</sup>	N/A	N/A	N/A	N/A
Home Energy Audits	0	16 <sup>[g][i]</sup>	N/A	N/A	N/A	N/A
Appliance Turn-In	0	16 <sup>[i]</sup>	N/A	N/A	N/A	N/A
EE HVAC	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
EE Products	0	N/A <sup>[d][i]</sup>	N/A	N/A	N/A	N/A
New Construction	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
Whole Building	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
Multiple Family	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
WARM Programs	0	204	N/A	N/A	N/A	N/A
Residential Audits-Low Income	0	N/A <sup>[e]</sup>	N/A	N/A	N/A	N/A
Appliance Turn-In-Low Income	0	N/A <sup>[e]</sup>	N/A	N/A	N/A	N/A
Energy Efficiency Products- Low Income	0	N/A <sup>[e]</sup>	N/A	N/A	N/A	N/A
Energy Audit and Technical Assessment	0	68	N/A	N/A	N/A	N/A
C/I Equipment Program	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
C/I Performance Contracting/Equipment	0	N/A <sup>[f]</sup>	N/A	N/A	N/A	N/A
Industrial Motors and VSD	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
PJM Demand Response	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
Street lighting	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
Non-Profit	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A
Remaining Government/Non-Profit	0	N/A <sup>[d]</sup>	N/A	N/A	N/A	N/A

**NOTES:**

[a] Number of participants sampled during program year to date.

[b] Target number of participants to sample during whole program year to achieve statistical significance.

[c] Confidence interval shown as uncertainty range associated with the realization rate at the confidence level selected for the program in accordance with the sampling and uncertainty protocol of the Act 129 Audit Plan. Interim realization rates for the Program Year and impacts are to be used for quarterly reports, i.e. realization rates are to be calculated with available data. Interim realization rates are used to calculate Interim PYTD Verified Impacts. Interim realization rates are based on realization rate calculations from a portion of the sample anticipated over the entire Program Year.

[d] Stratified Sampling Planned, but insufficient data as of February 2010 to estimate total sample size for reporting requirements

[e] Independent sample not required - need to assess % of total program participants are Low Income - Realization Rate is not expected to have a strong dependence on income

[f] Performance Contracting is considered to be a delivery mechanism inside the C/I equipment program, and does not require a separate sample from its 'parent' program, C/I equipment

[g] Initial Assumption: Coefficient of Variation in Annual Energy Savings is 0.5; finite population correction may apply for walk-through audits

[h] Finite population correction applied

[i] Basic Level of Rigor is appropriate for this program - 90/30 sampling is implied

## 1.5 Summary of Finances

The TRC test demonstrates the cost-effectiveness of a program by comparing the total economic benefits to the total costs<sup>6</sup>. A breakdown of the portfolio finances is presented in Table 1-10<sup>7</sup>.

**Table 1-10: Summary of Portfolio Finances: TRC Test<sup>8</sup>**

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development	\$89,722	\$380,454
Administration	\$602,852	\$602,852
Management	\$20,407	\$79,241
Marketing	\$0	\$0
Technical Assistance	\$356	\$356
<b>Subtotal EDC Implementation Costs</b>	<b>\$713,337</b>	<b>\$1,062,904</b>
EDC Evaluation Costs	\$4,920	\$5,475
SWE Audit Costs	\$91,611	\$132,738
Participant Costs	Not Reported	Not Reported
<b>Total Costs</b>	<b>\$809,868</b>	<b>\$1,201,117</b>
Annualized Avoided Supply Costs	Not Reported	Not Reported
Lifetime Avoided Supply Costs	Not Reported	Not Reported
<b>Total Lifetime Economic Benefits</b>	<b>Not Reported</b>	<b>Not Reported</b>
Portfolio Benefit-to-Cost Ratio	Not Reported	Not Reported

The TRC for each program is presented in Table 1-11.

**Table 1-11: Summary of Portfolio Budget by Program**

Program	TRC Benefits <sup>[a]</sup> (\$)	TRC Costs <sup>[b]</sup> (\$)	TRC Benefit-Cost Ratio <sup>[c]</sup>
<b>Portfolio</b>	Not Reported	Not Reported	Not Reported
<b>NOTES:</b>			
[a] Avoided supply costs, including the reduction in costs of electric energy, generation, transmission, and distribution capacity, and natural gas valued at marginal cost for periods when there is a load reduction. Subject to TRC Order. TRC Benefits are not required to be reported for the 3Q1Y quarterly report.			
[b] Costs paid by the program administrator and participants plus the increase in supply costs for any period when load is increased. Subject to TRC Order			

<sup>6</sup> Consistent with the Statewide Evaluator's March 31, 2010 Memo, Penelec's Third Quarter Program Year 1 Report will not include information related to TRC Benefit-to-Cost Ratios. This report will also not include information related to Participant Costs, nor Avoided Supply Costs.

<sup>7</sup> Throughout this report, PYTD values represent costs since program inception.

<sup>8</sup> Definitions for terms in following table are subject to TRC Order.



[c] Subject to TRC Order. TRC Benefit-Cost Ratios are not required to be reported for the 3Q1Y quarterly report.

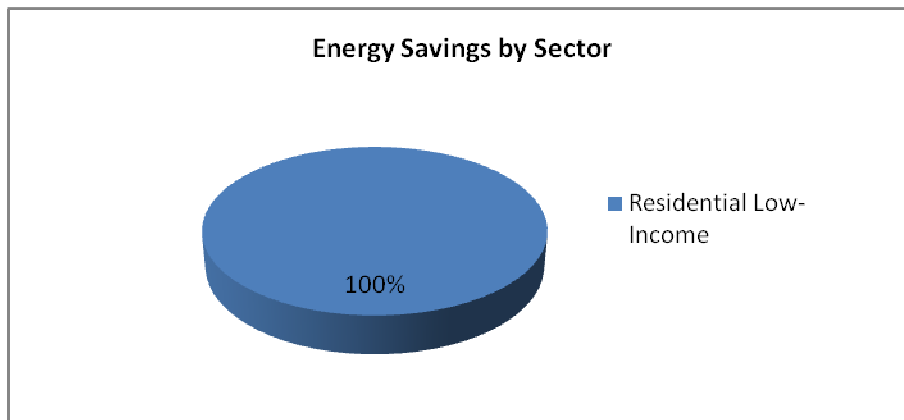
## 2 Portfolio Results by Sector

The Commission's EE&C Implementation Order issued on January 15<sup>th</sup>, 2009<sup>9</sup> states requirements for specific sectors on page 11. In order to comply with these requirements, each program has been categorized into one of the following sectors:

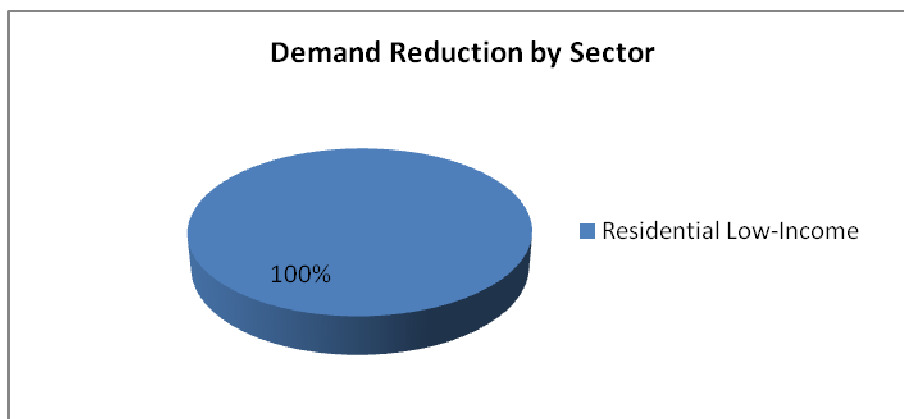
1. Residential EE (excluding Low-Income)
2. Residential Low-Income EE
3. Small Commercial & Industrial EE
4. Large Commercial & Industrial EE
5. Government & Non-Profit EE

A summary of portfolio gross energy savings and gross demand reduction by sector is presented in Figure 2-1 and Figure 2-2.

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



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



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<sup>9</sup> Docket No. M-2008-2069887

## 2.1 Residential EE Sector

The sector target for annual energy savings is 14,619 MWh and the sector target for annual peak demand reduction is 3.60 MW. At the end of the reporting quarter, the total energy savings was 0 MWh and the total peak demand reduction was 0 MW due to the fact that the programs are in the process of being launched.

A sector summary of results by program is presented in Table 2-1 and Table 2-2.

**Table 2-1: Summary of Residential EE Sector 3<sup>rd</sup> Quarter Results by Program through the 3<sup>rd</sup> Quarter, Year 1**

Residential EE Sector	Incremental Quarterly Participants	Incremental Quarterly Reported Gross Energy Savings (MWh)	Incremental Quarterly Reported Gross Demand Reduction (MW)
Demand Reduction	0	0	0.00
Home Energy Audits	0	0	0.00
Appliance Turn-In	0	0	0.00
EE HVAC	0	0	0.00
EE Products	0	0	0.00
New Construction	0	0	0.00
Whole Building	0	0	0.00
Multiple Family	0	0	0.00
<b>Sector Total</b>	0	0	0.00

**Table 2-2: Summary of Residential EE Sector PYTD Results by Program through the 3<sup>rd</sup> Quarter, Year 1**

Residential EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
Demand Reduction	0	0	0.00
Home Energy Audits	0	0	0.00
Appliance Turn-In	0	0	0.00
EE HVAC	0	0	0.00
EE Products	0	0	0.00
New Construction	0	0	0.00
Whole Building	0	0	0.00
Multiple Family	0	0	0.00
<b>Sector Total</b>	0	0	0.00

A summary of the sector energy savings by program is presented in Figure 2-3<sup>10</sup>.

A summary of the sector demand reduction by program is presented in Figure 2-4<sup>11</sup>.

<sup>10</sup> This Sector does not have multiple programs reporting PYTD Energy Savings, associated figure not produced.

<sup>11</sup> This Sector does not have multiple programs reporting PYTD Demand Reduction, associated figure not produced.

## 2.2 Residential Low-Income EE Sector

The sector target for annual energy savings is 543 MWh and the sector target for annual peak demand reduction is 0.06 MW. At the end of the reporting quarter, the total energy savings was 8 MWh and the total peak demand reduction was 0.00 MW due to the fact that the programs are in the process of being launched.

A sector summary of results by program is presented in Table 2-3 and Table 2-4.

Table 2-3: Summary of Residential Low-Income EE Sector 3<sup>rd</sup> Quarter Results by Program through the 3<sup>rd</sup> Quarter, Year 1

Residential Low-Income EE Sector	Incremental Quarterly Participants	Incremental Quarterly Reported Gross Energy Savings (MWh)	Incremental Quarterly Reported Gross Demand Reduction (MW)
WARM Programs	90	8	0.00
<b>Sector Total</b>	90	8	0.00

Table 2-4: Summary of Residential Low-Income EE Sector PYTD Results by Program through the 3<sup>rd</sup> Quarter, Year 1

Residential Low-Income EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
WARM Programs	90	8	0.00
<b>Sector Total</b>	90	8	0.00

A summary of the sector energy savings by program is presented in Figure 2-5<sup>12</sup>.

A summary of the sector demand reduction by program is presented in Figure 2-6<sup>13</sup>.

## 2.3 Small Commercial & Industrial EE Sector

The sector target for annual energy savings is 8,304 MWh and the sector target for annual peak demand reduction is 2.79 MW. At the end of the reporting quarter, the total energy savings was 0 MWh and the total peak demand reduction was 0.00 MW due to the fact that the programs are in the process of being launched.

A sector summary of results by program is presented in Table 2-5 and Table 2-6.

Table 2-5: Summary of Commercial/Industrial Small EE Sector 3<sup>rd</sup> Quarter Results by Program through the 3<sup>rd</sup> Quarter, Year 1

Commercial/Industrial Small EE Sector	Incremental Quarterly Participants	Incremental Quarterly Reported Gross Energy Savings	Incremental Quarterly Reported Gross Demand Reduction
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<sup>12</sup> This Sector does not have multiple programs reporting PYTD Energy Savings, associated figure not produced.

<sup>13</sup> This Sector does not have multiple programs reporting PYTD Demand Reduction, associated figure not produced.

		(MWh)	(MW)
Energy Audit and Technical Assessment	0	0	0.00
C/I Equipment Program	0	0	0.00
<b>Sector Total</b>	0	0	0.00

Table 2-6: Summary of Commercial/Industrial Small EE Sector PYTD Results by Program through the 3<sup>rd</sup> Quarter, Year 1

Commercial/Industrial Small EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings	PYTD Reported Gross Demand Reduction
		(MWh)	(MW)
Energy Audit and Technical Assessment	0	0	0.00
C/I Equipment Program	0	0	0.00
<b>Sector Total</b>	0	0	0.00

A summary of the sector energy savings by program is presented in Figure 2-7<sup>14</sup>.

A summary of the sector demand reduction by program is presented in Figure 2-8<sup>15</sup>.

## 2.4 Large Commercial & Industrial EE Sector

The sector target for annual energy savings is 2,424 MWh and the sector target for annual peak demand reduction is 0.61 MW. At the end of the reporting quarter, the total energy savings was 0 MWh and the total peak demand reduction was 0.00 MW due to the fact that the programs are in the process of being launched.

A sector summary of results by program is presented in Table 2-7 and Table 2-8.

Table 2-7: Summary of Commercial/Industrial Large EE Sector 3<sup>rd</sup> Quarter Results by Program through the 3<sup>rd</sup> Quarter, Year 1

Commercial/Industrial Large EE Sector	Incremental Quarterly Participants	Incremental Quarterly Reported Gross Energy Savings (MWh)	Incremental Quarterly Reported Gross Demand Reduction (MW)
C/I Performance Contracting/Equipment	0	0	0.00
Industrial Motors and VSD	0	0	0.00
PJM Demand Response	0	0	0.00
<b>Sector Total</b>	0	0	0.00

Table 2-8: Summary of Commercial/Industrial Large EE Sector PYTD Results by Program through the 3<sup>rd</sup> Quarter, Year 1

Commercial/Industrial Large EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings	PYTD Reported Gross Demand Reduction
		(MWh)	(MW)
C/I Performance Contracting/Equipment	0	0	0.00

<sup>14</sup> This Sector does not have multiple programs reporting PYTD Energy Savings, associated figure not produced.

<sup>15</sup> This Sector does not have multiple programs reporting PYTD Demand Reduction, associated figure not produced.

Industrial Motors and VSD	0	0	0.00
PJM Demand Response	0	0	0.00
<b>Sector Total</b>	0	0	0.00

A summary of the sector energy savings by program is presented in Figure 2-9<sup>16</sup>.

A summary of the sector demand reduction by program is presented in Figure 2-10<sup>17</sup>.

## 2.5 Government & Non-Profit EE Sector

The sector target for annual energy savings is 3,832 MWh and the sector target for annual peak demand reduction is 0.86 MW. At the end of the reporting quarter, the total energy savings was 0 MWh and the total peak demand reduction was 0.00 MW due to the fact that the programs are in the process of being launched.

A sector summary of results by program is presented in Table 2-9 and Table 2-10.

**Table 2-9: Summary of Governmental Programs EE Sector 3<sup>rd</sup> Quarter Results by Program through the 3<sup>rd</sup> Quarter, Year 1**

Governmental Programs EE Sector	Incremental Quarterly Participants	Incremental Quarterly Reported Gross Energy Savings (MWh)	Incremental Quarterly Reported Gross Demand Reduction (MW)
Street lighting	0	0	0.00
Non-Profit	0	0	0.00
Remaining Government/Non-Profit	0	0	0.00
<b>Sector Total</b>	0	0	0.00

**Table 2-10: Summary of Governmental Programs EE Sector PYTD Results by Program through the 3<sup>rd</sup> Quarter, Year 1**

Governmental Programs EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
Street lighting	0	0	0.00
Non-Profit	0	0	0.00
Remaining Government/Non-Profit	0	0	0.00
<b>Sector Total</b>	0	0	0.00

A summary of the sector energy savings by program is presented in Figure 2-11<sup>18</sup>.

A summary of the sector demand reduction by program is presented in Figure 2-12<sup>19</sup>.

<sup>16</sup> This Sector does not have multiple programs reporting PYTD Energy Savings, associated figure not produced.

<sup>17</sup> This Sector does not have multiple programs reporting PYTD Demand Reduction, associated figure not produced.

<sup>18</sup> This Sector does not have multiple programs reporting PYTD Energy Savings, associated figure not produced.

<sup>19</sup> This Sector does not have multiple programs reporting PYTD Demand Reduction, associated figure not produced.

### **3 Demand Response**

Demand response programs specifically target the reduction of peak demand through various demand-side management strategies. Penelec currently does not have any Demand Reduction savings to report in its 100 peak hours as interpreted by the PUC under Act 129<sup>20</sup>.

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<sup>20</sup> 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 will pay an incentive to participants who agree to have controls installed on their central air conditioning (CAC) systems that enable the Company 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 within the Company's top 100 load hours, typically from noon – 7 pm on selected weekdays.

#### **4.1.1 Program Logic**

It is anticipated that a third party CSP will be contracted to market and operate the program to customers in load areas across the three FirstEnergy operating companies in Pennsylvania.

Initially, the program will target customers located in major load areas to minimize risks associated with communications coverage. In order to gain more robust longer term program participation, direct load control switches will be chosen that will have the capability to utilize multiple communication protocols including ZIGBEE 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 Company will bid its Residential Direct Load Control programs into the PJM Reliability Pricing Model (RPM). The revenues received by the Company, 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.

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 the Company's annual report to the PUC.



#### 4.1.2 Program M&V Methodology

Following the selection of load control technologies, the Company will verify that demand reduction targets are being achieved consistent with requirements defined in PJM Manual 19, Attachment B, i.e. “either submit a load research study supporting base per-participant impacts ... or utilize the base per-participant impacts contained in the “Deemed Savings Estimates for Legacy Air Conditioning and Water Heating Direct Load Control Programs in PJM Region” report”, or other M&V accepted through PJM processes. Baseline conditions will be determined (at a minimum) through load research consistent with PJM standards for Direct Load Control resources, supported by enhanced functionality consistent with two-way load management and metering communications

#### 4.1.3 Program Sampling

If the CSP installs two-way devices, then ADM will be evaluating a census of run-time data. Typically, when installing two-way devices, the CSP will take a one-time power reading of the air conditioner and record the ambient temperature observed during the reading. This will allow ADM to correct the power reading to match the weather observed during curtailment events. If the CSP installs one-way devices, a load research sample will be required.

The required sample for this program is 70 units. The specific approach will be determined following technology selection.

#### 4.1.4 Program Partners and Trade Allies

Penelec is currently soliciting bids for the management of the Direct Load Control program with an expected launch date of June 1, 2010.

#### 4.1.5 Program Finances

A summary of the project finances are presented in Table 4-1.

Table 4-1: Summary of Program Finances: TRC Test<sup>21</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$7,331	\$31,084
Administration <sup>2</sup>	\$0	\$0
Management <sup>3</sup>	\$913	\$5,533
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$29	\$29
<b>Subtotal EDC Implementation Costs</b>	<b>\$8,273</b>	<b>\$36,646</b>
<b>EDC Evaluation Costs</b>	<b>\$402</b>	<b>\$447</b>

<sup>21</sup> Definitions for terms in following table are subject to TRC Order.

<b>SWE Audit Costs</b>	\$7,485	\$10,845
<b>Participant Costs</b>	\$0	\$0
<b>Total Costs</b>	<b>\$16,159</b>	<b>\$47,939</b>
<b>Annualized Avoided Supply Costs</b>	\$0	\$0
<b>Lifetime Avoided Supply Costs</b>	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## **4.2 Residential Home Energy Audit Program**

Households will be able to identify energy saving opportunities through two levels of home energy audits: 1) a self-administered on-line audit that analyzes historic energy use, and calculates energy savings based on customer responses to a series of questions, and 2) a walk-through on-site audit administered by a trained professional auditor. The purpose of the audits is to identify energy savings opportunities, to install basic low-cost measures, and to make customers aware of other programs offered by the Company, such as whole house wellness programs or programs they support, such as the Keystone Home Loan Program, to help customers implement the recommendations. Both audits generate delivery of an energy conservation kit.

### **4.2.1 Program Logic**

This program involves consumer education through generic energy savings tips combined with information customized to a specific dwelling based on either self-reported information or a trained auditor. This program serves as a portal to other program services. Customers are also referred to solutions, including participating retailers in the Energy Efficiency Products program, the E-store and the Keystone Home Loan Program for financing the balance of project costs.

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 the Company's annual report to the Commission.

There is no additional charge to complete the on-line audit. Customers are eligible to receive an energy conservation kit valued at up to \$104 once the audit is complete and uploaded.

Customers pay a fee of \$50 for the on-site audit and will receive specific energy efficiency recommendations and direct installed energy savings measures of an equal value.

### **4.2.2 Program M&V Methodology**

This program has two components: online audits and walk-through audits. The M&V effort for the Home Energy Audit program has two goals:

1. Determine the gross energy savings and demand reductions due to the energy efficiency measures distributed to participants of the online and walk-through audits.
2. Determine the extent of "funneling" of customers to other residential rebate programs offered by the EDCs.

### **Gross Impact Analysis**

The energy conservation kits consist of four compact fluorescent lamps, two faucet aerators (savings claimed only for homes with electric water heating) and up to two "smart" power strips. Customers have some room to customize the contents of the energy conservation kits, so a small fraction of the kits may also contain LED night lights. The gross impact analysis for the energy conservation kits has two components:

1. Determine the installation rate for the various kit elements

2. Determine the average energy savings and demand reductions for the kit elements. The installation rate will be determined through a combination of on-site visits and telephone interviews. The energy savings and demand reductions for the various kit elements will utilize deemed savings for measures that are in the Pennsylvania TRM (e.g. CFLs), or that will be given “deemed” status by the Public Utility Commission, and ADM and the Company are supporting deemed savings with the Statewide Evaluator for other measures that are not in the current TRM.

### **Process Evaluation**

A second aspect of the M&V is to determine the relationship between the Audit program and the other energy efficiency programs offered by the Company. 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 Company. Quantitatively, one can track the number of audit participants that also participated in other Company programs. Qualitatively, the evaluation effort will attempt to capture whether the appropriate energy savings opportunities are identified and described to the customers. To this end, ADM analysts will request access to the online audits and enter hypothetical information to gauge the audit’s response to the data. For the walk-through audits, M&V analysts will request the data recorded on-site and the recommendations made by the walk-through auditors. Additionally, M&V field staff will accompany auditors for a small sample of walk-through audits.

### **4.2.3 Program Sampling**

#### **Gross Impact Sample**

The sampling approach for this program is batch-wise simple random sampling on a monthly basis for the first program year and on a quarterly year thereafter. The first sample will be drawn from all sites that have participated in audits up through March 31, 2010. For the first sample, the M&V work will entail verification and assessment of the installation rate for the conservation kit components. The “deemed” or “custom” status of the “smart power strips”, faucet aerators, and LED night lights should be known by May, 2010.

#### **Program Funneling Sample**

The program “funneling” will be captured with a certainty sample. ADM staff and contractors will record the customer and premise identification numbers for all participants of the home energy audits and search tracking data for other residential energy efficiency programs for matching identification numbers. In this fashion, the rebate program participation of the audit participants can be tracked and compared to participation rates for customers that did not participate in audits. Additionally, the fraction of the ex-ante energy savings that is attributable to customers that *previously* participated in the Home Energy Audits will be computed for each residential program.

### **4.2.4 Program Partners and Trade Allies**

#### *Home Energy Analyzer:*

The Aclara Software Company is the owner of 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](http://www.firstenergycorp.com) or over the phone with customer service (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 which includes 4

CFLs, 4 faucet aerators, 2 smart strips and 2 LED nightlights is sent to the customer. The customer has the option to decline receiving an Energy Conservation Kit.

#### *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 (CFLs, low-flow shower heads, etc.). Honeywell Utility Solutions is Penelec's CSP who will conduct Walk Through Home Energy Audits and complete the installation of energy savings measures. Honeywell may recruit and develop qualified contractors if necessary.

### 4.2.5 Program Finances

A summary of the project finances are presented in Table 4-2.

**Table 4-2: Summary of Program Finances: TRC Test<sup>22</sup>**

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$11,557	\$49,005
Administration <sup>2</sup>	\$145,633	\$145,633
Management <sup>3</sup>	\$10,175	\$19,748
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$46	\$46
<b>Subtotal EDC Implementation Costs</b>	<b>\$167,410</b>	<b>\$214,431</b>
<b>EDC Evaluation Costs</b>	<b>\$634</b>	<b>\$705</b>
<b>SWE Audit Costs</b>	<b>\$11,800</b>	<b>\$17,097</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$179,844</b>	<b>\$232,234</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>22</sup> Definitions for terms in following table are subject to TRC Order.

<sup>5</sup>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 operational and meet established size requirements.

#### **4.3.1 Program Logic**

JACO is the program CSP hired by Penelec to deliver this program in coordination with PECO Energy Company, and PPL Electric Utilities. Regional roll-out and community outreach will support efficiency.

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 the Company's annual report to the Commission.

The vendor is required to test appliances before removing them and issuing the incentive. Pre-testing may result in lower participation but better quality control.

Customers will be alerted to this service through various media and marketing channels to facilitate targeted roll-out of the program, and efficient collection in targeted areas. A broad customer awareness campaign will include introduction of the program and the need for consumers to take energy efficiency actions.

#### **4.3.2 Program M&V Methodology**

Savings from this program are determined under the assumption that the rebates are going towards participating customers that have taken a refrigerator, freezer, or RAC out of service. The savings from refrigerator recycling are stipulated in the TRM. The savings due to recycling of RACs is not captured in the current TRM. ADM and the Company are supporting deemed savings to be used for RAC under the statewide program. Verification work will entail 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 batch-wise simple random sampling on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will be drawn from all appliances recycled through March 31, 2010.

#### **4.3.4 Program Partners and Trade Allies**

JACO is the CSP for Penelec's PA EDC Appliance Turn-In Program's supporting residential customers.

#### **4.3.5 Program Finances**

A summary of the project finances are presented in Table 4-3.

**Table 4-3: Summary of Program Finances: TRC Test<sup>23</sup>**

	<b>Quarter</b>	<b>PYTD</b>
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$9,091	\$38,548
Administration <sup>2</sup>	\$0	\$0
Management <sup>3</sup>	\$1,132	\$6,861
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$36	\$36
<b>Subtotal EDC Implementation Costs</b>	<b>\$10,259</b>	<b>\$45,445</b>
<b>EDC Evaluation Costs</b>	<b>\$498</b>	<b>\$555</b>
<b>SWE Audit Costs</b>	<b>\$9,282</b>	<b>\$13,449</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$20,039</b>	<b>\$59,448</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>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.

<sup>23</sup> Definitions for terms in following table are subject to TRC Order.

The program also provides incentives for maintenance (tune-ups) of existing central air conditioners or heat pump equipment, and will offer a \$40 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)
- Central air conditioning maintenance and furnace fan motor replacement meeting Energy Star guidelines.

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

#### **4.4.2 Program M&V Methodology**

##### **Gross Impact Analysis**

The evaluation effort is conducted using separate methodologies for rebated heat pumps and CACs, rebated solar water heaters, and HVAC maintenance. Details of the methodologies described in the subsections below.

##### **Gross Impact for CACs and Heat Pumps**

Savings associated with these HVAC systems are estimated using a partially deemed approach, with the kWh reduction taken as a function of deemed hours of operation for each EDC's service territory and nameplate information regarding unit capacities and efficiencies. The baseline efficiencies are stipulated in the TRM and are in accordance with Federal codes and standards for small split HVAC systems. The 'nameplate' data (e.g. capacity, SEER, EER, COP, HSPF) that inform the 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.

##### **Gross Impact for AC Tune Ups**

The verification for AC tune-ups must include two components. First, the fact that a tune-up occurred as claimed in the DSM tracking system must be verified. 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, ADM will coordinate concurrent visits with randomly chosen trade allies that conduct AC tune ups.

##### **Gross Impact for Solar Water Heaters**

Currently, Solar Water Heaters (SWH) are not included in the TRM. This measure comprises about 1% of the expected energy savings for the program. In this context, a deemed savings approach to impact



evaluation is appropriate. The Company is currently proposing to have this measure granted deemed status.

#### 4.4.3 Program Sampling

To determine the sampling plan, ADM analysts have simulated ex-ante data according to the partially deemed energy savings scheme outlined in the TRM. The simulated ex-ante dataset shows that the savings from rebated units and tune ups are comparable, but that a bimodal distribution exists with the energy savings from heat pumps (and tune ups on heat pumps) about five to six times larger than the energy savings from rebated or maintained CACs.

The sampling approach for this program is batch-wise stratified random sampling on a monthly basis for the first program year and on a quarterly basis thereafter. 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. The first sample will be drawn from all measures rebated up through April 30 2010. If the SWHs are granted deemed status, they will be included in the same stratum as heat pumps. Otherwise, a census of SWH sites will be used in the billing analysis.

#### 4.4.4 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 Penelec'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.

#### 4.4.5 Program Finances

A summary of the project finances are presented in Table 4-4.

Table 4-4: Summary of Program Finances: TRC Test<sup>24</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$2,246	\$9,523
Administration <sup>2</sup>	\$44,604	\$44,604
Management <sup>3</sup>	\$280	\$1,695
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$9	\$9
<b>Subtotal EDC Implementation Costs</b>	<b>\$47,138</b>	<b>\$55,831</b>
<b>EDC Evaluation Costs</b>	<b>\$123</b>	<b>\$137</b>

<sup>24</sup> Definitions for terms in following table are subject to TRC Order.

<b>SWE Audit Costs</b>	\$2,293	\$3,323
<b>Participant Costs</b>	\$0	\$0
<b>Total Costs</b>	<b>\$49,554</b>	<b>\$59,291</b>
<b>Annualized Avoided Supply Costs</b>	\$0	\$0
<b>Lifetime Avoided Supply Costs</b>	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## 4.5 Residential Energy Efficient Products Program

The Energy Efficient Products Program provides financial incentives to customers and support to retailers that sell energy efficient products, such as ENERGY STAR® qualified appliances or compact fluorescent light bulbs. 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. Also includes existing catalogue 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.

Participation by low-income customers will be tracked or estimated to support assessment of equitable treatment of low-income customers. Estimates of low-income participation by zip code and census will be included in the Company’s annual report to the Commission.

For the program, the minimum qualifying efficiency ratings are based on current ENERGY STAR® qualified appliances published by the 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 plus an administrative fee paid to the manufacturers and retailers in support of the campaign. 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 based

off point of sale purchase data. A second incentive will be coupons through print media or bill inserts. This is a manufacturer coupon offer paid by the utility and redeemed at any participating retailer. Coupons at retail are another method to incent customers which includes providing a coupon at the point of sale such as a shelf coupon pad that is redeemed at the register. A third method can be rebate forms that are mailed to a clearing house with rebate checks sent directly to customers. A fourth method could be 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 as well as appliance and replacement product pick up and disposal services. 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 kW reduction taken as deemed in accordance with the TRM. Additional evaluation will be performed to assess hours of operation and baseline technologies via customer intercept surveys. Customers are stopped in-store following completion of their lighting purchase and are given a brief (1-2 minute) interview. In this interview, the evaluator records the quantity and wattage of purchased lighting, and recruits the customer for a follow-up survey. In the follow-up survey, the customer is asked the following:

- How many of the purchased CFLs have been installed?
- What rooms of the house were they installed in?
- Are you actively replacing incandescent lamps with CFLs or replacing only on burn-out?

Utilizing these survey results, hours of use are then determined based on the KEMA 2005 CFL runtime study<sup>25</sup>. This study will constitute primary data collection toward the "CFL<sub>watts</sub>" quantity noted in the TRM. Moreover, it will serve as a cross check on the stipulated installation rates and average usage hours stated in the TRM.

##### **Gross Impact for Appliances**

Gross kWh savings for appliances sold through the Residential Energy Efficient Products program are determined via deemed savings estimates for measures included in the statewide TRM.

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<sup>25</sup> KEMA, "CFL Metering Study", prepared for the California Public Utilities Commission, 2005

Currently, RACs are not included in the TRM. The Company is proposing that this measure is granted deemed status.

### 4.5.3 Program Sampling

The two program components require differing sampling strategies, with the methodologies described in the subsections to follow.

#### Gross Impact Sampling for CFL Component

Sampling for the CFL component will constitute the selection of stores for on-site intercept surveying on a monthly basis for the first program year and on a quarterly basis thereafter. To meet program-level sample goals, 2-3 stores in Penelec territory will be visited per quarter, representing a wide array of participating large retailers. The first such visits will occur in late April 2010. The goal will be to draw a sample of 70 completed follow-up surveys for each EDC territory. The M&V work will entail telephone verification of participating lighting purchasers and determination of hours of operation and the average difference in wattage between the CFLs and that supplanted lamps via collection of data pertaining to the room in which CFLs were installed and whether they replaced CFLs or incandescent lamps.

#### Gross Impact Sampling for Appliance Component

The sampling approach for this program is batch-wise simple random sampling on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will be drawn from all appliances purchased up through April 30 2010. The M&V work will entail telephone verification for deemed measures and billing analysis for RACs should they not be approved for a deemed amount in the TRM.

### 4.5.4 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 products. Honeywell is Penelec'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.

### 4.5.5 Program Finances

A summary of the project finances are presented in Table 4-5.

Table 4-5: Summary of Program Finances: TRC Test<sup>26</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$7,657	\$32,467
Administration <sup>2</sup>	\$86,170	\$86,170

<sup>26</sup> Definitions for terms in following table are subject to TRC Order.

Management <sup>3</sup>	\$953	\$5,779
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$30	\$30
<b>Subtotal EDC Implementation Costs</b>	<b>\$94,811</b>	<b>\$124,446</b>
<b>EDC Evaluation Costs</b>	<b>\$420</b>	<b>\$467</b>
<b>SWE Audit Costs</b>	<b>\$7,818</b>	<b>\$11,327</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$103,048</b>	<b>\$136,241</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>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, and can participate in the prescriptive rebates offered under the other residential rebate programs.

### 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 remodeled homes.

To qualify for this program, the home must exceed the PA Energy Code (International Energy Conservation Code IECC 2006) requirements by at least 15% and 30%. 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 M&V effort for the Residential New Construction program has two goals:

1. Determine the gross energy savings and demand reductions due to the features of the homes which caused it to perform better than the IECC 2006 baseline efficiency home.
2. Determine the impact of the market transformation efforts resulting from the marketing and builder outreach component.

#### **Gross Impact Analysis**

The gross impact analysis for the program has two 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, and
3. Verify the construction and orientation of a sample of the homes using “drive-by” visits and telephone surveys.

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. A “drive-by” 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 drive-by site visit. Follow-up telephone interviews may be required in some cases to verify equipment efficiency if not accessible during the drive-by 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.

#### **Marketing and Builder Outreach**

A second aspect of the M&V is to determine the degree to which the program influenced builders to think differently about their company’s home construction practices and to implement best practices in their homes. The primary mechanism for evaluating the marketing and builder outreach components will be a telephone survey of program implementation staff, plan review agencies, and decision makers (builders). The surveys will investigate the number of builders that took part in the Company marketing and outreach programs. The survey will also assess to specific building characteristics that were upgraded to meet the Energy Star 15 percent and 30 percent above minimum standard thresholds.

### 4.6.3 Program Sampling

The sampling approach for this program is batch-wise stratified random sampling on a monthly basis for the first program year and on a quarterly basis thereafter. 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, 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 "drive-by" verification will encompass a range of participants homes constructed under the program at various times throughout the year.

### Marketing and Builder Outreach Sampling

M&V staff will obtain a schedule of the upcoming marketing and outreach events and select the largest two events (by number of anticipated builders in attendance) to attend in person. Informal surveys will further explore the role of the EDCs in the residential new construction marketplace.

### 4.6.4 Program Partners and Trade Allies

Penelec is currently soliciting bids for the management of the Residential New Construction program with an expected launch date of June 1, 2010. It is expected that the chosen CSP will look for retroactive savings on new homes completed after October 28, 2009. PA utilities are exploring the possibility of hiring a statewide CSP for this program.

### 4.6.5 Program Finances

A summary of the project finances are presented in Table 4-6.

Table 4-6: Summary of Program Finances: TRC Test<sup>27</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$6,151	\$26,083
Administration <sup>2</sup>	\$0	\$0
Management <sup>3</sup>	\$766	\$4,643
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$24	\$24
<b>Subtotal EDC Implementation Costs</b>	<b>\$6,942</b>	<b>\$30,750</b>
<b>EDC Evaluation Costs</b>	<b>\$337</b>	<b>\$375</b>
<b>SWE Audit Costs</b>	<b>\$6,281</b>	<b>\$9,100</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$13,559</b>	<b>\$40,226</b>

<sup>27</sup> Definitions for terms in following table are subject to TRC Order.

<b>Annualized Avoided Supply Costs</b>	\$0	\$0
<b>Lifetime Avoided Supply Costs</b>	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## 4.7 Residential Whole Building Comprehensive Program

Building upon the Home Energy Audit (prerequisite), this program provides comprehensive diagnostic assessments followed by direct installation of selected low cost measures plus incentives to households for implementation of measures addressing building shell, appliances and other energy consuming features. Customers can tap into prescriptive rebates as well as the Keystone Home Loan Program.

### 4.7.1 Program Logic

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 will pay a fee of \$100 for the services and will receive discounted pricing for eligible measures ranging from free kitchen and bathroom faucet aerators to \$300 toward the cost for duct sealing. Participating customers are encouraged to participate in the Keystone Home Loan Program for the balance of project costs as needed.

BPI-certified contractors, including CBOs delivering the WARM program would implement the program. Program services will be most likely be coordinated by a national vendor who will develop a pool of local contractors to deliver services to customers.

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, environmental safety measures. It is a combination information and installation program. The same equipment offered to existing residential customers under the other programs are eligible for installation in new homes under this program. However, customers may not take rebates under both programs, but must elect which program to participate in.

### 4.7.2 Program M&V Methodology

The gross impact analysis for the program has two 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,
4. Determine the success of the program to develop local energy audit resources.

Following significant levels of participation in the program (i.e. over approximately 30 participants), additional verification work will be performed. The energy savings of the program first will be determined through an exploratory billing analysis. The budget constraints require that very high quality data are provided to ADM. For the exploratory billing analysis to occur, monthly billing data will be required for both participants and non-participants. This will provide a control group for regression analysis of billing data; with pre- and post-installation bills for participant and non-participant households, the results of the associated Fixed Effects regression modeling will be more robust and will depict household-level energy reduction attributable strictly to program participation. A panel regression analysis will employ dummy variables for the specific measures installed to determine the impact on savings from the low and medium-cost measures.

If the exploratory billing analysis is not possible (or if the budget allows), the energy impacts will (also) 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.

#### **Marketing and Builder Outreach**

A second aspect of the M&V is to determine the degree to which the program influenced homeowners to take action upon the upgrade recommendations. The primary mechanism for evaluating the marketing and outreach components will be a telephone survey of program implementation staff, and decision makers (builders).

#### **4.7.3 Program Sampling**

##### **Gross Impact Sample**

The sampling approach for this program is batch-wise stratified random sampling on a monthly basis<sup>28</sup>. The sample will be stratified according to the builder. At least three participant homes for each auditor will be selected for on-site data collection, one small, one medium, and one large home energy-savings 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

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<sup>28</sup> If the coefficient of variation in the ex-ante savings for the sample allows, we ADM will conduct simple random sampling.

new home HERS Rater marketplace. The final sample for telephone verification will encompass a range of participants homes constructed under the program at various times throughout the year.

#### Marketing and Builder Outreach Sampling

ADM staff will obtain a schedule of the upcoming marketing and outreach events. Informal surveys will explore the role of Penelec in the residential energy audit and upgrade marketplace.

#### 4.7.4 Program Partners and Trade Allies

Residential customers who heat and cool with electricity will be eligible to receive a comprehensive whole house audit detailing specific measures to improve the energy efficiency of their home. Honeywell is Penelec'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. Incentives are available to encourage customers to implement cost effective energy efficiency improvements.

#### 4.7.5 Program Finances

A summary of the project finances are presented in Table 4-7.

Table 4-7: Summary of Program Finances: TRC Test<sup>29</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$6,034	\$25,587
Administration <sup>2</sup>	\$13,810	\$13,810
Management <sup>3</sup>	\$751	\$4,554
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$24	\$24
<b>Subtotal EDC Implementation Costs</b>	<b>\$20,620</b>	<b>\$43,976</b>
<b>EDC Evaluation Costs</b>	<b>\$331</b>	<b>\$368</b>
<b>SWE Audit Costs</b>	<b>\$6,161</b>	<b>\$8,927</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$27,112</b>	<b>\$53,272</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>29</sup> Definitions for terms in following table are subject to TRC Order.

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## **4.8 Residential Multiple Family Program**

This program leverages audit services already being provided by the Pennsylvania Housing Finance Agency (PHFA) by having auditors directly install common area lighting measures at the time of the audit, and providing a package of lighting measures to tenants.

### **4.8.1 Program Logic**

The objective of this program is to immediately capture electric energy savings available in common lighting areas (hallways, exit signs, laundry facilities, exterior lighting, etc.). In addition, electricity use in PHFA apartment units is not currently addressed by the PHFA program. 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 may experience lower electric bills. Regardless of whether a tenant in a PHFA building is master metered or a customer of record, they will be offered a conservation kit consisting of CFLs and water faucet aerators.

Building upon the PHFA Audit, this program provides common area interior and exterior lighting measures for multifamily buildings, CFLs for apartment units and faucet aerators for apartments that have electric water heating. Tenants will be notified of the availability of kits through various normal communications via landlord notices, door hangers and other means.

Participation by low-income customers will be tracked or estimated to support assessment of equitable treatment of low-income customers. Estimates of low-income participation by zip code and census will be included in the Company's annual report to the PUC.

### **4.8.2 Program M&V Methodology**

The gross impact analysis for the energy conservation kits has two components:

1. Determine the installation rates for the various kit elements; and
2. Determine the average energy savings and demand reductions for the kit elements.

The installation rate will be determined through a combination of on-site visits and telephone interviews. The energy savings and demand reductions for the various kit elements will utilize one of two methodologies:

- For measures that are in the TRM (e.g. CFLs), or that will be given "deemed" status by the PUC, the energy savings and demand reductions will be stipulated according to the appropriate amount in the deemed savings structure.
- ADM and the Company are proposing that other measures delivered through the program also be granted deemed status.

#### 4.8.3 Program Sampling

The sampling approach is batch-wise simple random sampling on a monthly basis for the first program year and on a quarterly basis thereafter.

**Multi Family – Residential:** The gross impact of the CFL/Aerator Conservation Kits passed out to residential accounts will be determined with 30% precision at the 90% confidence level unless the faucet aerators will be judged to require “enhanced M&V rigor”, in which case the savings must be determined with 10% precision at the 90% confidence level.

**Multi Family – C/I:** The combined gross impact of the CFL/Aerator Conservation Kits passed out to tenants in master-metered non-public communities, and of the common area lighting upgrades in non-public communities, will be determined with 10% precision at the 90% confidence level. The sampling unit will be the apartment complex.

**Multi Family – Government:** The combined gross impact of the CFL/Aerator Conservation Kits passed out to tenants in master-metered PHFA communities, and of the common area lighting upgrades in PHFA communities, will be determined with 10% precision at the 90% confidence level. The sampling unit will be the apartment complex.

#### 4.8.4 Program Partners and Trade Allies

Penelec is in the process of finalizing implementation details and anticipates using SAIC to administer this program to multifamily buildings on nonresidential rates. SAIC is responsible for marketing by conducting face to face presentations, email solicitations and using Penelec personnel. The expected launch date is in the first quarter of program year 2011.

#### 4.8.5 Program Finances

A summary of the project finances are presented in Table 4-8.

Table 4-8: Summary of Program Finances: TRC Test<sup>30</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$547	\$2,319
Administration <sup>2</sup>	\$37,290	\$37,290
Management <sup>3</sup>	\$68	\$413
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$2	\$2
<b>Subtotal EDC Implementation Costs</b>	<b>\$37,907</b>	<b>\$40,024</b>
<b>EDC Evaluation Costs</b>	<b>\$30</b>	<b>\$33</b>

<sup>30</sup> Definitions for terms in following table are subject to TRC Order.

<b>SWE Audit Costs</b>	\$558	\$809
<b>Participant Costs</b>	\$0	\$0
<b>Total Costs</b>	<b>\$38,496</b>	<b>\$40,866</b>
<b>Annualized Avoided Supply Costs</b>	\$0	\$0
<b>Lifetime Avoided Supply Costs</b>	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>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, known as WARM that will provide additional electric energy savings measures and services to income-eligible customers. Expanded measures include an average of 4 additional CFLs and smart power strips.

### **WARM Plus Program:**

This program is an expansion of, and enhancement to the existing comprehensive Low-Income Usage Reduction Program, known as WARM that will provide additional electric energy savings measures and services to income-eligible customers. The WARM Plus program will support a 25% increase in the number of income-eligible homes receiving comprehensive treatments for Penelec.

### **Low-Income, Low-Use Program:**

This program is for low-income customers that do not meet the minimum usage qualification of 600 kWh/month to qualify for the WARM program. These customers will receive CFLs, aerators 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 normal WARM Program maximum allotment per home.

Program services would be 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 program is managed internally by Company staff with outside agencies and private contractors performing comprehensive whole-house energy audits and direct installation of all cost-effective electricity-saving measures.

**WARM Plus Program:**

This program provides additional electric energy savings measures and whole-house services to lower income households.

Program services would be 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: replacement lighting, smart power strips, energy education, other residential programs (e.g., appliance recycling, multi-family, energy efficient products, and load control programs). The program will also increase availability of subsidized energy efficiency services to 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 the Company to target this previously unserved group for energy savings by providing them with CFLs, aerators, and energy education materials.

#### **4.9.2 Program M&V Methodology**

**WARM Extra Measures Program:**

ADM will conduct site visits to verify that the Smart Power Strips are 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 are 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 2007 WARM program. The impact evaluation of the 2008 WARM program is currently underway. The methodology employed is a statistical billing analysis. ADM is in contact with the WARM program managers. As the WARM Plus program is essentially unchanged from the 2008 WARM program, ADM will review the impact evaluation methodology for the ongoing evaluation of the year-2008 WARM program. If the methodology is judged to be sound, the average per-site savings for the 2008 WARM program will be imputed onto the 2010 WARM program sites. Otherwise, ADM will conduct an independent billing analysis.

**Low-Income, Low-Use Program:**

The energy conservation kits consist of four CFLs and two faucet aerators (savings claimed only for homes with electric water heating). Customers have some room to customize the contents of the energy conservation kits, so a small fraction of the kits may also contain LED night lights. The gross impact analysis for the energy conservation kits has two components:

1. Determine the installation rate for the various kit elements – for the faucet aerators in particular, the verification must confirm that the homes where the aerators are installed must have electric water heating.

2. Determine the average energy savings and demand reductions for the kit elements. The installation rate will be determined through a combination of on-site visits and telephone interviews. The energy savings and demand reductions for the various kit elements will utilize one of two methodologies:

- The CFLs have “deemed” status by the PUC, the energy savings and demand reductions will be stipulated according to the appropriate amount in the TRM.
- The faucet aerators do not have currently “deemed” status. If the faucet aerators are determined to be ‘custom measures’ by the PUC and Statewide Evaluator, short-term monitoring will establish the energy savings. Pre-post monitoring is possible through coordination with Company staff responsible for distributing the energy conservation kits.

#### **4.9.3 Program Sampling**

##### **WARM Extra Measures Program:**

The sample will be updated on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will be drawn from of all sites that have participated in audits up through March 31 2010.

##### **WARM Plus Program:**

The sampling approach for this program is batch-wise simple random sampling on a quarterly basis.

##### **Low-Income, Low-Use Program:**

The sample will be updated on a quarterly basis. The first sample will be drawn from of all sites that have participated in audits up through March 31 2010.

#### **4.9.4 Program Partners and Trade Allies**

##### **WARM Extra Measures Program:**

Program services are delivered by existing Low Income Usage Reduction Program non-profit agencies, private contractors and subcontractors. Additional private contractors were hired to increase capacity to meet the Company’s EE&C Plan.

Internal Company staff manages the program. Agencies and private contractors perform comprehensive whole house energy audits and direct installation of all cost-effective electricity-saving measures.

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

- ACTION Housing, Inc. (quality assurance contractor)
- Bill Busters, Inc.
- Blair County Community Action Program
- Community Action Partnership of Cambria County
- Center for Community Action
- Central PA Community Action
- Community Action, Inc.
- CMC Energy
- EIC/Comfort Home Corp.
- Erie County Housing Authority
- Greater Erie Community Action Committee
- Indiana County Community Action Program
- Northern Tier Community Action

Northwest PA Weatherization  
 SEDA – Council of Governments  
 Solair Energy Inc.  
 South Central Community Action Program  
 Tableland Services  
 Treatment and Rehabilitation Center  
 Venango Office of Economic Opportunity  
 Warren-Forest Counties Economic Opportunity Council  
 Weatherization, Inc.

**WARM Plus Program:**

Program services are delivered by existing Low Income Usage Reduction Program (LIURP) non-profit agencies, private contractors and subcontractors. Additional private contractors were hired to increase capacity to meet the Company’s EE&C Plan.

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

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

CMC Energy Services  
 EIC Comfort Homes, Inc.  
 Erie County Housing Authority  
 Solair Energy, Inc.  
 Tableland Services, Inc.

**Low-Income, Low-Use Program:**

There are a large number of WARM applicants who do not meet the minimum usage requirement of 600 kWh per month necessary to benefit from energy savings. In order to meet these customers’ needs, we will be providing them with kits which will include CFLs, aerators, and energy education materials.

The distribution channels and contractors have yet to be determined. This program will launch in September 2010.

**4.9.5 Program Finances**

A summary of the project finances are presented in Table 4-9.

**Table 4-9: Summary of Program Finances: TRC Test<sup>31</sup>**

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>

<sup>31</sup> Definitions for terms in following table are subject to TRC Order.



Design & Development <sup>1</sup>	\$7,900	\$33,499
Administration <sup>2</sup>	\$1,882	\$1,882
Management <sup>3</sup>	\$1,483	\$6,461
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$31	\$31
<b>Subtotal EDC Implementation Costs</b>	<b>\$11,296</b>	<b>\$41,873</b>
<b>EDC Evaluation Costs</b>	<b>\$433</b>	<b>\$482</b>
<b>SWE Audit Costs</b>	<b>\$8,066</b>	<b>\$11,687</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$19,796</b>	<b>\$54,043</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## 4.10 Commercial / Industrial Small Sector Energy Audit and Technical Assessment Program

This program supports two levels of energy audit services: 1) a simple walk-through audit for small businesses with non-complex loads; and, 2) a more comprehensive assessment for medium to large non-residential customers to help identify existing end uses of energy and specific ways in which energy savings can be achieved. The audit supports obtaining rebates and other incentives through other Company programs.

### 4.10.1 Program Logic

This program will be delivered by a vendor that provides energy audit/assessment services to document the building's existing equipment and efficiency opportunities prior to installation of efficiency measures.

Registration will be encouraged in the EPA's Benchmarking Tool that provides additional insights as to energy efficiency levels. Office equipment audits will be included for appropriate building types to ensure proper efficiency settings on equipment, and to identify savings potential for plug loads.

The Company will support and track participation by low-income multi-family customers in the program.

#### **4.10.2 Program M&V Methodology**

##### **Process Evaluation**

M&V will determine the relationship between the Audit program and the other energy efficiency programs offered by the Company. 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 Company. Quantitatively, one can track the number of audit participants that also participated in other Company energy efficiency programs. Qualitatively, the M&V effort will attempt to capture whether the appropriate energy savings opportunities are identified and described to the customers. Additionally, PA Consulting staff 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 had about the program
- Motivations 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
- Recommendations for program improvement

##### **Evaluating the Procedures for Administering and Managing the Program**

In addition to the above interviews, ADM and PA Consulting staff will conduct interviews with Penelec 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
- 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.

#### 4.10.3 Program Sampling

##### Gross Impact Sample

The sampling approach for this program is batch-wise simple random sampling on a monthly basis for the program year ending May 31 2010, and on a quarterly basis thereafter. The first sample will be drawn from all sites that have participated in audits up through April 30, 2010.

##### Program Funneling Sample

The program “funneling” will be captured with a certainty sample. ADM and PA consulting staff will record the customer and premise identification numbers for all participants of the home energy audits and search tracking data for other nonresidential energy efficiency programs for matching identification numbers. In this fashion, the rebate program participation of the audit participants can be tracked and compared to participation rates for customers that did not participate in audits. Additionally, the fraction of the ex-ante energy savings that is attributable to customers that *previously* participated in the Energy Audits will be computed for each nonresidential program.

##### Process Evaluation Sample

The process evaluation will include interviews with key staff at the Company and the Small C/I audit vendor. It is expected that a relatively small number of Large C/I trade allies will be responsible for the majority of the Large C/I audits. The trade ally interviews will contain a census of the major participants and a simple random sample of the remaining trade allies. Program participants and non-participants will be sampled on a random and periodic basis.

#### 4.10.4 Program Partners and Trade Allies

SAIC was contracted to administer this program and will send out a request for qualifications (RFQ) to gather interested energy auditors for all nonresidential sectors. This list will be provided to commercial and industrial customers. In addition, an application form will be posted on our website for county and local government and school customers to apply for an incentive towards their audit. SAIC will also administer the incentive process. 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.

#### 4.10.5 Program Finances

A summary of the project finances are presented in Table 4-10.

Table 4-10: Summary of Program Finances: TRC Test<sup>32</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>

<sup>32</sup> Definitions for terms in following table are subject to TRC Order.

Design & Development <sup>1</sup>	\$644	\$2,731
Administration <sup>2</sup>	\$76,097	\$76,097
Management <sup>3</sup>	\$80	\$486
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$3	\$3
<b>Subtotal EDC Implementation Costs</b>	<b>\$76,824</b>	<b>\$79,317</b>
<b>EDC Evaluation Costs</b>	<b>\$35</b>	<b>\$39</b>
<b>SWE Audit Costs</b>	<b>\$658</b>	<b>\$953</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$77,517</b>	<b>\$80,309</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## 4.11 Commercial / Industrial Small Sector Equipment Program

This program provides for the implementation of cost effective, high efficiency measures through the authorized contractor network for local, state and federal buildings, as well as for non-profit and institutional customers.

### 4.11.1 Program Logic

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.

Incentives are provided to offset a portion of the incremental technology costs (“capital costs”) of high efficiency units as well as technical support when needed. The Company currently supports measures targeting existing buildings with packaged commercial HVAC systems for small commercial and industrial customers. Tenants in rental properties will be eligible with appropriate approvals from the property owner.

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.

#### **4.11.2 Program M&V Methodology**

This program implements both custom measures and deemed savings measures. As such, our M&V methodology will depend on whether the measure being evaluated is custom or deemed.

ADM will evaluate the measures savings for all measures listed in the TRM based on their deemed values, assumptions, and formulas. These measures require some site data collection (such as hours-of-operation, quantity installed, unit size, etc.) to be evaluated. This data will be collected during our on-site visit by interviewing facility staff, taking a census of measure equipment, and/or equipment monitoring.

The nature of the custom measures being evaluated will dictate the approach by which their savings are estimated. For many of the custom measures, the formulas listed in the TRM are still applicable. However, the deemed assumptions (i.e. run-time hours, equivalent full load hours, etc.) are not applicable and must be developed on a site-by site basis using monitoring data, site interviews, etc. Some custom HVAC measures will require thermal energy model simulation. For these measures an eQuest building model will be developed for the facility and the energy efficiency measures simulated (IPMVP Option D). Before the measures are simulated the eQuest model is calibrated to the facility's billed energy using the appropriate (hourly) weather data from the National Oceanic and Atmospheric Administration (NOAA). Process upgrades will generally require pre- and post monitoring of energy usage and of other factors that determine energy usage (IPMVP Option B). For example, process improvements often coincide with expansion of capacity and production, and this must be accounted for in the energy savings calculation.

#### **4.11.3 Program Sampling**

The sampling approach for this program is batch-wise stratified sampling, updated on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will consist of all program participants up through March 31, 2010. For this sample the M&V work will entail visiting each sample site, facility staff interviews, post end-use monitoring, and data analysis. Future samples will include both pre and post end-use monitoring.

#### **4.11.4 Program Partners and Trade Allies**

SAIC is the CSP to administer this program and is responsible for marketing by conducting face to face presentations, email solicitations and using Penelec 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 distributions, trade shows and case studies) SAIC will market directly to customers. In addition, there will be special emphasis on trade and professional organizations using event sponsorship, membership and speaking opportunities.

#### 4.11.5 Program Finances

A summary of the project finances are presented in Table 4-11.

Table 4-11: Summary of Program Finances: TRC Test<sup>33</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$13,952	\$59,162
Administration <sup>2</sup>	\$40,425	\$40,425
Management <sup>3</sup>	\$1,737	\$10,530
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$55	\$55
<b>Subtotal EDC Implementation Costs</b>	<b>\$56,170</b>	<b>\$110,173</b>
<b>EDC Evaluation Costs</b>	<b>\$765</b>	<b>\$851</b>
<b>SWE Audit Costs</b>	<b>\$14,246</b>	<b>\$20,641</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$71,181</b>	<b>\$131,666</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

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

To participate, DR-CSPs must register their customers for capacity in the PJM ILR or DR programs, and must register for PJM economic load response program (ELRP) “events” that include specific days and hours defined through Company notifications on a day-of or day-ahead basis (Peak Load Reduction (“PLR”) Performance Periods).

<sup>33</sup> Definitions for terms in following table are subject to TRC Order.

- a. Notifications will be provided to the DR-CSPs at least three hours prior to the event.
- b. DR-CSP registration of PLR Performance Periods in PJM ELRP events is required to enable PJM processes for verification of actual peak load reductions. The days and hours for that define periods of performance.
- c. Performance Periods will be limited to week days between noon and 8 PM, with durations of a minimum of one hour up to the full 6 hours.

#### **4.12.1 Program Logic**

The Company 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.

Since this program is a mandatory curtailment program, there is a risk that the hours that the Company calls for curtailment will not be in the top 100 load hours.

#### **4.12.2 Program M&V Methodology**

This program provides rebates for large non-residential customers that agree to curtail energy use during peak events. Facilities receive rebates based upon the amount of verified kW reduction during curtailment events.

#### **Gross Impact Analysis**

Verified demand reduction for this program is calculated on a per-site basis in accordance with PJM protocols for load curtailments. To verify the kW impact, ADM will review a sample of load reductions and baseline calculations supporting hourly load reduction impacts.

#### **4.12.3 Program Sampling**

##### **Gross Impact Sample**

It is likely that the commercial load control program will require a census of participants, as the number of participants would be small, with each providing a significant amount of peak kW reduction. If this is not the case, then ADM will stratify by facility type and type of curtailed load in order to subsample amount relatively homogenous groups.

#### **4.12.4 Program Partners and Trade Allies**

Penelec plans to issue an RFP to curtailment providers sometime during the third quarter of 2010.

#### **4.12.5 Program Finances**

Program finances will be reported after the fourth quarter of 2010.

## **4.13 Commercial / Industrial Large Sector Performance Contracting/Equipment Program**

Large commercial and industrial (and other non-residential) customers may elect to secure 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.

### **4.13.1 Program Logic**

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 that agree to terms for participation. 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.

### **4.13.2 Program M&V Methodology**

The nature of the custom measures being evaluated will dictate the approach by which their savings are estimated. For many of the custom measures, the formulas listed in the TRM are still applicable. However, the deemed assumptions (i.e. run-time hours, equivalent full load hours, etc.) are not applicable and must be developed on a site-by site basis using monitoring data, site interviews, etc. Some custom HVAC measures will require thermal energy model simulation. For these measures an eQuest building model will be developed for the facility and the energy efficiency measures simulated (IPMVP Option D). Before the measures are simulated the eQuest model is calibrated to the facility's billed energy using the appropriate (hourly) weather data from the National Oceanic and Atmospheric Administration (NOAA). Process upgrades will generally require pre- and post monitoring of energy usage and of other factors that determine energy usage (IPMVP Option B). For example, process improvements often coincide with expansion of capacity and production, and this must be accounted for in the energy savings calculation.

### **4.13.3 Program Sampling**

The sampling approach for this program is batch-wise stratified sampling, updated on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will consist of all program participants up through March 31, 2010. For this sample the M&V work will entail visiting each sample site, facility staff interviews, post end-use monitoring, and data analysis. Future samples will include both pre and post end-use monitoring.

### **4.13.4 Program Partners and Trade Allies**

SAIC is the CSP who will administer this program and is responsible for marketing by conducting face to face presentations, email solicitations and using Penelec 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 will market directly to customers or their performance contractors. In addition, there will be special emphasis on trade and professional organizations using event sponsorship, membership and speaking opportunities.

### **4.13.5 Program Finances**

A summary of the project finances are presented in Table 4-12.



**Table 4-12: Summary of Program Finances: TRC Test<sup>34</sup>**

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$8,285	\$35,132
Administration <sup>2</sup>	\$60,602	\$60,602
Management <sup>3</sup>	\$1,032	\$6,253
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$33	\$33
<b>Subtotal EDC Implementation Costs</b>	<b>\$69,952</b>	<b>\$102,021</b>
<b>EDC Evaluation Costs</b>	<b>\$454</b>	<b>\$506</b>
<b>SWE Audit Costs</b>	<b>\$8,460</b>	<b>\$12,257</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$78,866</b>	<b>\$114,784</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

#### **4.14 Commercial / Industrial Large Sector Industrial Motors and Variable Speed Drives Program**

This program is designed to encourage the company'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
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 (centrifugal pumps and fans) or the application of use includes mechanical throttling (valves, dampers,

<sup>34</sup> Definitions for terms in following table are subject to TRC Order.

etc). Applications with low variability of loads such as vibrating conveyors, punch presses, rock crushers, machine tools and other applications where the motor runs at constant speed are not good candidates for a variable-speed drive.

#### **4.14.1 Program Logic**

This program seeks to provide an incentive for the Company's customers to recognize that energy savings and costs are possible when motors are upgraded to NEMA Premium<sup>®</sup> motors. The relatively low cost of electrical energy may have resulted in many customers not focusing on or considering upgrading their motors. The incentives offered by the Company 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 the Company's motor upgrade budget.

1. To qualify for an incentive, the motor(s) must operate a minimum of 3,000 hrs/yr
2. The motor upgrade program's individual incentives per motor start at \$20 for a 1HP.
3. The variable-speed drive incentive is \$30 per horsepower of the motor being used.

The program will be administered by SAIC through regional motor distributors.

#### **4.14.2 Program M&V Methodology**

This program implements both custom measures and deemed savings measures. As such, our M&V methodology will depend on whether the measure being evaluated is custom or deemed.

ADM will evaluate the measures savings for all measures listed in the TRM based on their deemed values, assumptions, and formulas. These measures require some site data collection (such as hours-of-operation, quantity installed, unit size, etc.) to be evaluated. This data will be collected during our on-site visit by interviewing facility staff, taking a census of measure equipment, and/or equipment monitoring.

The nature of the custom measures being evaluated will dictate the approach by which their savings are estimated. For many of the custom measures, the formulas listed in the TRM are still applicable. However, the deemed assumptions (i.e. run-time hours, equivalent full load hours, etc.) are not applicable and must be developed on a site-by site basis using monitoring data, site interviews, etc. Some custom HVAC motor measures will require thermal energy model simulation. For these measures an eQuest building model will be developed for the facility and the energy efficiency measures simulated (IPMVP Option D). Before the measures are simulated the eQuest model is calibrated to the facility's billed energy using the appropriate (hourly) weather data from the National Oceanic and Atmospheric Administration (NOAA). Process upgrades will generally require pre- and post monitoring of energy usage and of other factors that determine energy usage (IPMVP Option B). For example, process improvements often coincide with expansion of capacity and production, and this must be accounted for in the energy savings calculation.

#### **4.14.3 Program Sampling**

The sampling approach for this program is batch-wise stratified sampling, updated on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will be drawn from all

program participants up through April 30, 2010. For this sample the M&V work will entail visiting each sample site, facility staff interviews, post end-use monitoring, and data analysis. Future samples will include both pre and post end-use monitoring.

#### 4.14.4 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 Penelec 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.

#### 4.14.5 Program Finances

A summary of the project finances are presented in Table 4-13.

Table 4-13: Summary of Program Finances: TRC Test<sup>35</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$2,109	\$8,944
Administration <sup>2</sup>	\$63,679	\$63,679
Management <sup>3</sup>	\$263	\$1,592
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$8	\$8
<b>Subtotal EDC Implementation Costs</b>	<b>\$66,059</b>	<b>\$74,223</b>
<b>EDC Evaluation Costs</b>	<b>\$116</b>	<b>\$129</b>
<b>SWE Audit Costs</b>	<b>\$2,154</b>	<b>\$3,120</b>
<b>Participant Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Costs</b>	<b>\$68,328</b>	<b>\$77,472</b>
<b>Annualized Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Lifetime Avoided Supply Costs</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>35</sup> Definitions for terms in following table are subject to TRC Order.

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## 4.15 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 street lights to high pressure sodium.

### 4.15.1 Program Logic

This program provides incentives to offset the incremental technology costs (“capital costs”) for energy efficient retrofit projects. In addition, they will provide technical support, rebates, and support for financing.

### 4.15.2 Program M&V Methodology

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 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.

### 4.15.3 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.

### 4.15.4 Program Partners and Trade Allies

More than 98% of streetlights that must be changed under this program are Penelec owned. The Company 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 Penelec area managers or customer service representatives.

### 4.15.5 Program Finances

A summary of the project finances are presented in Table 4-14.

Table 4-14: Summary of Program Finances: TRC Test<sup>36</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$3,311	\$14,039
Administration <sup>2</sup>	\$7,007	\$7,007
Management <sup>3</sup>	\$412	\$2,499
Marketing <sup>4</sup>	\$0	\$0

<sup>36</sup> Definitions for terms in following table are subject to TRC Order.

Technical Assistance <sup>5</sup>	\$13	\$13
<b>Subtotal EDC Implementation Costs</b>	<b>\$10,743</b>	<b>\$23,557</b>
<b>EDC Evaluation Costs</b>	\$182	\$202
<b>SWE Audit Costs</b>	\$3,380	\$4,898
<b>Participant Costs</b>	\$0	\$0
<b>Total Costs</b>	<b>\$14,305</b>	<b>\$28,657</b>
<b>Annualized Avoided Supply Costs</b>	\$0	\$0
<b>Lifetime Avoided Supply Costs</b>	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

## 4.16 Governmental / Non-Profit Program

The Traffic Signal Program is another program targeted at local governments. This component of the Government program will seek to convert traffic signals and pedestrian/cycling signals to LED technology.

### 4.16.1 Program Logic

This program provides incentives to offset the incremental technology costs (“capital costs”) for energy efficient retrofit projects. In addition, they will provide technical support, rebates, and support for financing.

### 4.16.2 Program M&V Methodology

The savings from these measures are captured in the TRM, with a deemed amount for each LED signal and pedestrian light type. ADM will use deemed savings estimates along with on-site verification to assess the gross energy and demand impact of this program.

### 4.16.3 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.

#### 4.16.4 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 Penelec personnel. This program will be marketed primarily to County and local government, nonprofit and institutional customers, such as schools and colleges. SAIC will market directly to customers using tools such as the website, email-based distribution lists, trade shows and case studies.

#### 4.16.5 Program Finances

A summary of the project finances are presented in Table 4-15.

Table 4-15: Summary of Program Finances: TRC Test<sup>37</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$287	\$1,217
Administration <sup>2</sup>	\$11,662	\$11,662
Management <sup>3</sup>	\$36	\$217
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$1	\$1
<b>Subtotal EDC Implementation Costs</b>	<b>\$11,986</b>	<b>\$13,097</b>
EDC Evaluation Costs	\$16	\$18
SWE Audit Costs	\$293	\$425
Participant Costs	\$0	\$0
<b>Total Costs</b>	<b>\$12,295</b>	<b>\$13,540</b>
Annualized Avoided Supply Costs	\$0	\$0
Lifetime Avoided Supply Costs	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>0.00</b>	<b>0.00</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

<sup>37</sup> Definitions for terms in following table are subject to TRC Order.

#### **4.17 Governmental / Remaining Non-Profit Programs**

The Federal Facilities Program supports identifying energy savings opportunities to expedite the Federal Government agencies taking action.

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 necessary for school districts to install high-efficiency measures.

County and Local Buildings including schools will be provided energy audits free of charge as a way to increase the proportional share of saving received from governmental customers.

##### **4.17.1 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.

Participation by low-income customers will be tracked or estimated to support assessment of equitable treatment of low-income customers. Estimates of low-income participation by zip code and census will be included in the Company's annual report to the Commission.

##### **4.17.2 Program M&V Methodology**

This program implements both custom measures and deemed savings measures. As such, our M&V methodology will depend on whether the measure being evaluated is custom or deemed.

ADM will evaluate the measures savings for all measures listed in the TRM based on their deemed values, assumptions, and formulas. These measures require some site data collection (such as hours-of-operation, quantity installed, unit size, etc.) to be evaluated. This data will be collected during our on-site visit by interviewing facility staff, taking a census of measure equipment, and/or equipment monitoring.

The nature of the custom measures being evaluated will dictate the approach by which their savings are estimated. For many of the custom measures, the formulas listed in the TRM are still applicable. However, the deemed assumptions (i.e. run-time hours, equivalent full load hours, etc.) are not applicable and must be developed on a site-by site basis using monitoring data, site interviews, etc. Some custom HVAC measures will require thermal energy model simulation. For these measures an eQuest building model will be developed for the facility and the energy efficiency measures simulated (IPMVP Option D). Before the measures are simulated the eQuest model is calibrated to the facility's billed energy using the appropriate (hourly) weather data from the National Oceanic and Atmospheric Administration (NOAA). Process upgrades will generally require pre- and post monitoring of energy usage and of other factors that determine energy usage (IPMVP Option B). For example, process improvements often coincide with expansion of capacity and production, and this must be accounted for in the energy savings calculation.

##### **4.17.3 Program Sampling**

The sampling approach for this program is batch-wise stratified sampling, updated on a monthly basis for the first program year and on a quarterly basis thereafter. The first sample will be drawn from all program participants through April 30, 2010. For this sample the M&V work will entail visiting each sample site, facility staff interviews, post end-use monitoring, and data analysis. Future samples will include both pre and post end-use monitoring.



#### 4.17.4 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 Penelec personnel. This program will be marketed primarily to County and local government, nonprofit and institutional customers like schools and colleges. SAIC will market directly to customers using tools such as the website, email distributions, trade shows and case studies.

#### 4.17.5 Program Finances

A summary of the project finances are presented in Table 4-16.

Table 4-16: Summary of Program Finances: TRC Test<sup>38</sup>

	Quarter	PYTD
EDC Incentives to Participants	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>
Design & Development <sup>1</sup>	\$2,621	\$11,114
Administration <sup>2</sup>	\$13,990	\$13,990
Management <sup>3</sup>	\$326	\$1,978
Marketing <sup>4</sup>	\$0	\$0
Technical Assistance <sup>5</sup>	\$10	\$10
<b>Subtotal EDC Implementation Costs</b>	<b>\$16,948</b>	<b>\$27,093</b>
<b>EDC Evaluation Costs</b>	\$144	\$160
<b>SWE Audit Costs</b>	\$2,676	\$3,878
<b>Participant Costs</b>	\$0	\$0
<b>Total Costs</b>	<b>\$19,768</b>	<b>\$31,130</b>
<b>Annualized Avoided Supply Costs</b>	\$0	\$0
<b>Lifetime Avoided Supply Costs</b>	\$0	\$0
<b>Total Lifetime Economic Benefits</b>	<b>\$0</b>	<b>\$0</b>
<b>Portfolio Benefit-to-Cost Ratio</b>	<b>N/A</b>	<b>N/A</b>

<sup>1</sup>Includes cost of EE Expert

<sup>2</sup>Costs paid to Conservation Service Providers (CSPs) for program implementation

<sup>3</sup>Costs incurred to manage the CSPs and programs

<sup>4</sup>Includes umbrella marketing costs for all programs. Marketing completed by the CSPs are included in administration.

<sup>5</sup>Includes costs for Tracking and Reporting System

<sup>38</sup> Definitions for terms in following table are subject to TRC Order.

## 5 Program Implementation Timeline

Consistent with the PUC's Opinions and Orders in Docket Nos. M-2009-2092222, M-2009-2112952 and M-2009-2112956, the Companies launched several programs and are currently in the process of launching the Companies' EE&C Plan's remaining programs through a combination of in-house utility staff and competitively selected Conservation Service Providers (CSP). Penelec's current timeline for program implementation is listed in the following Table 5-1.

Table 5-1: Program Implementation Timeline:

Sector	Program Name	Proposed Launch Date	Actual Launch Date <sup>1</sup>
<b>A. RESIDENTIAL SECTOR</b>			
Residential	Direct Load Control	4Q 2010	
Residential	Home Energy Audits	May-10	
Residential	Appliance Turn-In	Mar-10	Mar-10
Residential	HVAC & Solar Water Heat	Apr-10	
Residential	EE Products Program	Mar-10	Apr-10
Residential	New Construction	4Q 2010	
Residential	Whole Building	Jun-10	
Residential	Multi-Family - Tenants	Apr-10	
<b>B. LOW-INCOME RESIDENTIAL SECTOR</b>			
Low-Income	Warm Programs - Warm Plus	Feb-10	Apr-10
Low-Income	Warm Programs - Warm Extra Measures	Nov-09	Nov-09
Low-Income	Warm Programs - Low Income - Low Use	Sep-10	
<b>C. SMALL C&amp;I SECTOR</b>			
Small C&I	Energy Audit and Technology Assessment Program	Apr-10	
Small C&I	C/I Equipment Rebates	Feb-10	Feb-10
<b>D. LARGE C&amp;I SECTOR</b>			
Large C&I	C/I Equipment Rebates - Performance Contracting	Apr-10	
Large C&I	Industrial Motors and Variable Speed Drives	Apr-10	Apr-10
Large C&I	C/I PJM Demand Response	4Q 2010	
<b>E. GOVERNMENT &amp; NON-PROFIT SECTOR</b>			
Gov't & Non-Profit	Non-Profit	Apr-10	Feb-10
Gov't & Non-Profit	Street Lighting	Apr-10	Apr-10
Gov't & Non-Profit	Remaining Government/Non-Profit	Apr-10	

<sup>1</sup>Eligibility requirements are defined in Program material documentation and may not correspond to listed dates.