

# **Preliminary Annual Report to the Pennsylvania Public Utility Commission**

**For the period  
June 1, 2010 to May 31, 2011  
Including 4<sup>th</sup> Quarter for Program Year 2**

For Act 129 of 2008  
Energy Efficiency and Conservation Program

Prepared by Navigant Consulting, Inc.

For

Duquesne Light Company

July 15, 2011

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## Abbreviations

CAR	Clerical Adjustment Rate
CFL	Compact Fluorescent Lamp
CPITD	Cumulative Program/Portfolio Inception to Date
CSP	Conservation Service Provider
DLC	Duquesne Light Company
EDC	Electric Distribution Company
EE&C	Energy Efficiency & Conservation
EM&V	Evaluation Measurement and Verification
IQ	Incremental Quarter
IR	Installation Rate
kW	Kilowatt
kWh	Kilowatt-hour
LIEEP	Residential Low-Income Energy Efficiency Program
M&V	Measurement and Verification
MW	Megawatt
MWh	Megawatt-hour
NTG	Net-to-Gross
PA	Pennsylvania
PMRS	Program Management and Reporting System
PQ	Program-Qualifier Rate
PUC	Public Utility Commission
PY	Program/Portfolio Year
PY2	Program Year 2 (July 2010 to June 2011)
PYTD	Program/Portfolio Year to Date
REEP	Residential Energy Efficiency Rebate Program
RR	Realization Rate
RARP	Residential Appliance Recycling Program
SEP	Residential School Energy Pledge
SWE	Statewide Evaluator
TRC	Total Resource Cost
TRM	Technical Reference Manual
UES	Unit Energy Savings
VR	Verification Rate

## 1 Overview of Portfolio

Act 129, signed October 15<sup>th</sup>, 2008, mandated energy savings and demand reduction goals for the largest electric distribution companies (EDC) in Pennsylvania. Pursuant to their goals, energy efficiency and conservation (EE&C) plans were submitted by each EDC and approved by the Pennsylvania Public Utility Commission (PUC). This preliminary annual report documents the progress and effectiveness of the EE&C accomplishments for Duquesne Light through the end of PY2, including Quarter 4 of Program Year 2010 (also referred to as “PY2 Q4”).

### Compliance goal progress as of the end of the reporting period:

#### Cumulative Portfolio Energy Impacts

- The CPITD reported gross energy savings are 174,001 MWh.
- The CPITD verified energy savings are 31,576 MWh.<sup>1</sup>
- The CPITD unverified energy savings are 142,425 MWh.<sup>2</sup>
- The CPITD committed and achieved energy savings represent 124% of the 140,885 MWh May 31<sup>st</sup>, 2011 energy savings compliance target.<sup>3</sup>
- The CPITD committed and achieved energy savings represent 41.2% of the 422,565 MWh May 31<sup>st</sup>, 2013 energy savings compliance target.<sup>4</sup>
- The preliminary realization rate for energy savings (cumulative program inception through the end of PY2Q2) is estimated to be 97.4%.

#### Cumulative Portfolio Demand Reductions

- The CPITD reported gross demand reductions are 18.97 MW.
- The CPITD verified demand reductions are 2.62 MW.<sup>5</sup>
- The CPITD unverified demand reductions are 16.35 MW.<sup>6</sup>
- The CPITD committed and achieved demand reductions represent 16.8% of the 113 MW May 31<sup>st</sup>, 2013 demand reductions compliance target.<sup>7</sup>
- The preliminary realization rate for demand reductions (cumulative program inception through the end of PY2Q2) is estimated to be 93.7%.

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<sup>1</sup> CPITD energy savings are verified through PY2 Q2.

<sup>2</sup> CPITD unverified energy savings are PY2 Q3 and Q4 reported gross values.

<sup>3</sup> Energy savings compliance target as communicated in EM&V plan, section 1.1.2, page 3.

<sup>4</sup> Energy savings compliance target as communicated in EM&V plan, section 1.1.2, page 3.

<sup>5</sup> CPITD demand reductions are verified through PY2 Q2.

<sup>6</sup> CPITD unverified demand reductions are PY2 Q3 and Q4 reported gross values.

<sup>7</sup> Demand reductions compliance targets as communicated in EM&V plan, section 1.1.2, page 3.

### **Low Income Sector**

- The CPITD reported gross energy savings for low-income are 16,399 MWh (including both the low-income portion of the upstream lighting and the low-income programs).
- The CPITD reported gross energy savings from low-income upstream lighting are 14,573 MWh, the remaining low-income programs savings are 1,826 MWh.
- The CPITD verified energy savings for low-income sector programs are 786 MWh.<sup>8</sup> In addition, the low income portion of the upstream lighting program, which is not subject to further verification requirements, resulted in energy savings of 14,573 MWh.
- The CPITD unverified energy savings for low income sector programs are 1,040 MWh.<sup>9</sup>
- The preliminary realization rate for energy savings (cumulative program inception through the end of PY2Q2) for low income sector programs is estimated to be 99.6%.

### **Government and Non-Profit Sector**

- The CPITD reported gross energy savings for government and non-profit sector programs are 27,659 MWh.
- The CPITD verified energy savings for government and non-profit sector programs are 565 MWh.<sup>10</sup>
- The CPITD unverified energy savings for government and non-profit sector programs are 27,094 MWh.<sup>11</sup>
- The CPITD committed and achieved energy savings for government and non-profit sector programs represent 65.5% of the 42,257 MWh May 31<sup>st</sup>, 2013 energy savings compliance target.
- The preliminary realization rate for energy savings (cumulative program inception through the end of PY2Q2) for government and non-profit sector programs is estimated to be 91.9%.

### **Program Year portfolio highlights as of the end of the reporting period:**

- The PYTD reported gross energy savings are 169,851 MWh.
- The PYTD verified energy savings are 28,023 MWh.<sup>12</sup>
- The PYTD unverified energy savings are 141,828 MWh.<sup>13</sup>
- The preliminary realization rate for energy savings (total program year through the end of PY2Q2) is estimated to be 97.4%.
- The PYTD reported gross demand reductions are 17.89 MW.
- The PYTD verified demand reductions are 2.46 MW.<sup>14</sup>
- The PYTD unverified demand reductions are 15.43 MW.<sup>15</sup>
- The PYTD reported participation is 20,867 participants.<sup>16</sup>

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<sup>8</sup> CPITD energy savings are verified through PY2 Q2.

<sup>9</sup> CPITD unverified energy savings are PY2 Q3 and Q4 reported gross values, not including upstream lighting.

<sup>10</sup> CPITD energy savings are verified through PY2 Q2.

<sup>11</sup> CPITD unverified energy savings are PY2 Q3 and Q4 reported gross values.

<sup>12</sup> PYTD energy savings are verified through PY2 Q2.

<sup>13</sup> PYTD unverified energy savings are PY2 Q3 and Q4 reported gross values.

<sup>14</sup> PYTD demand reductions are verified through PY2 Q2.

<sup>15</sup> PYTD unverified demand reductions are PY2 Q3 and Q4 reported gross values.

- The preliminary realization rate for demand reductions (total program year through the end of PY2Q2) is estimated to be 93.5%.

Duquesne Light filed its EE&C Plan on July 1, 2009 and received Commission conditional approval on October 22, 2009. Many programs were launched on or about December 1, 2009. Duquesne Light's PY 2010 Quarter 4 EE&C program accomplishments have been increasing while the ramp-up activities of those programs have been subsiding.

Business process teams have continued to review their processes and make mid course changes while working within the context of the PA PUC approved Plan.

Meetings are held at a minimum monthly with the contracted CSPs for the Large Office and Primary Metals segments, the Small Office and Retail segments and the Mixed Industrial and Chemical segments. Events have been attended to continue to build recognition of Watt Choices. The Program Management and Reporting System was reviewed following the development of the PY1 annual report which led to minor improvements. Each quarter, subsequent assessments are made in order that any necessary improvements are made prior to the development of the next quarterly report. A new EM&V contractor, Navigant Consulting, began EM&V activities in PY2Q3. MCR Performance Solutions continued to provide EM&V support in this reporting period.

For savings impact evaluation purposes, on June 24, 2011 an evaluation dataset was downloaded directly from PMRS that contained records of customer actions taken to implement energy efficiency measures termed "projects" completed by Duquesne Light's EE&C Programs during Quarter 4 of PY 2010. The program activity for PY2 Q4 is summarized in Table 1-1.

Due to adjustments in the reporting logic authorized by the SWE,<sup>17</sup> the completion date for certain projects shifted. As a result of this reporting logic change, the CPITD gross impact reported in PY2Q3 increased 4,057 MWh from 56,852 MWh to 60,909 MWh, and the demand reduction increased 1.160 MW from 4.795 MW to 5.955 MW.

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<sup>16</sup> Upstream CFL program participants are reported separately and not included in these program participant numbers.

<sup>17</sup> Secretarial letter dated May, 25 2011 permits projects to be reported upon completed installation and demonstrated operability. Prior to this memo, projects were allowed to be reported upon completed installation, demonstrated operability and incentive payment.

**Table 1-1: PY2 Q4 Program Activity (Gross Reported)**

<b>Program</b>	<b>Participants</b>	<b>Reported Total Energy Savings (kWh)</b>	<b>Reported Total Demand Reduction (kW)</b>
Residential: EE Program (REEP): Rebate Program	5,898	2,660,989	176.6
Residential: School Energy Pledge	2,546	1,054,044	34.9
Residential: Appliance Recycling	724	1,280,448	176.0
Residential: Low Income EE	1,129	542,046	29.9
Commercial Sector Umbrella EE	17	1,440,275	339.0
Healthcare EE	5	809,469	67.0
Industrial Sector Umbrella EE	1	122,536	23.2
Chemical Products EE	7	14,989,692	1,867.6
Mixed Industrial EE	29	5,651,617	683.8
Office Building – Large – EE	46	12,910,900	2,330.4
Office Building – Small EE	45	1,086,909	261.7
Primary Metals EE	14	18,560,344	2,085.5
Public Agency / Non-Profit	116	24,556,199	2,545.6
Retail Stores EE	145	6,961,743	1,182.4
Subtotal	10,722	92,627,211	11,803.7
	(CFLs)		
Residential: EE Program (Upstream Lighting)	124,997	5,892,560	323.3
Residential: Low Income EE (Upstream Lighting)	304,001	14,572,595	888.8
<b>PY2-Q4 Program Activity (Gross Reported)</b>		<b>113,092,366</b>	<b>13,015.8</b>

The Low-Income Upstream Lighting is reported for the first time in PY2 Q4. A portion of the Upstream Lighting program is allocated to the Low Income sector based on the portion of DLC’s households that are low-income. The Q4 result for the low income sector includes 27.3% of the entire Upstream Lighting program to date savings.

For all programs, PY2 Q4 EM&V will be performed and reported in conjunction with the next reporting event, the PY2 Annual Report.

## 1.1 Summary of Portfolio Impacts

A summary of the portfolio reported impacts is presented in Table 1-2.<sup>18</sup>

**Table 1-2: EDC Reported Portfolio Impacts through the End of the Reporting Period**

Impact Type	Total Energy Savings (MWh)	Total Demand Reduction (MW)
Reported Gross Impact: Incremental Quarterly	113,092	13.02
Reported Gross Impact: Program Year to Date	169,851	17.88
Reported Gross Impact: Cumulative Portfolio Inception to Date	174,001	18.97
Unverified Ex Post Savings	0	0.00
Estimated Impact: PYTD Total Committed	169,851	17.88
Preliminary PYTD Verified Impact <sup>1</sup>	28,023	2.46
Preliminary PYTD Net Impact <sup>1</sup>	28,023	2.46
Verified Savings: Cumulative Portfolio Inception to Date <sup>1</sup>	31,576	2.63
<b>NOTES:</b>		
<sup>1</sup> Values provided are as of PY2 Q2.		

Table 1-3 below is a placeholder for summarizing the total resource summary benefits and costs.

**Table 1-3: Verified Preliminary Portfolio Total Evaluation Adjusted Impacts through the End of the Reporting Period**

TRC Category	IQ	PYTD	CPITD
TRC Benefits (\$)	N/A	N/A	N/A
TRC Costs (\$)	N/A	N/A	N/A
TRC Benefit-Cost Ratio			N/A
<b>NOTES:</b>			
Per direction from the SWE on 9/13/2010, no TRC values are provided for this report.			

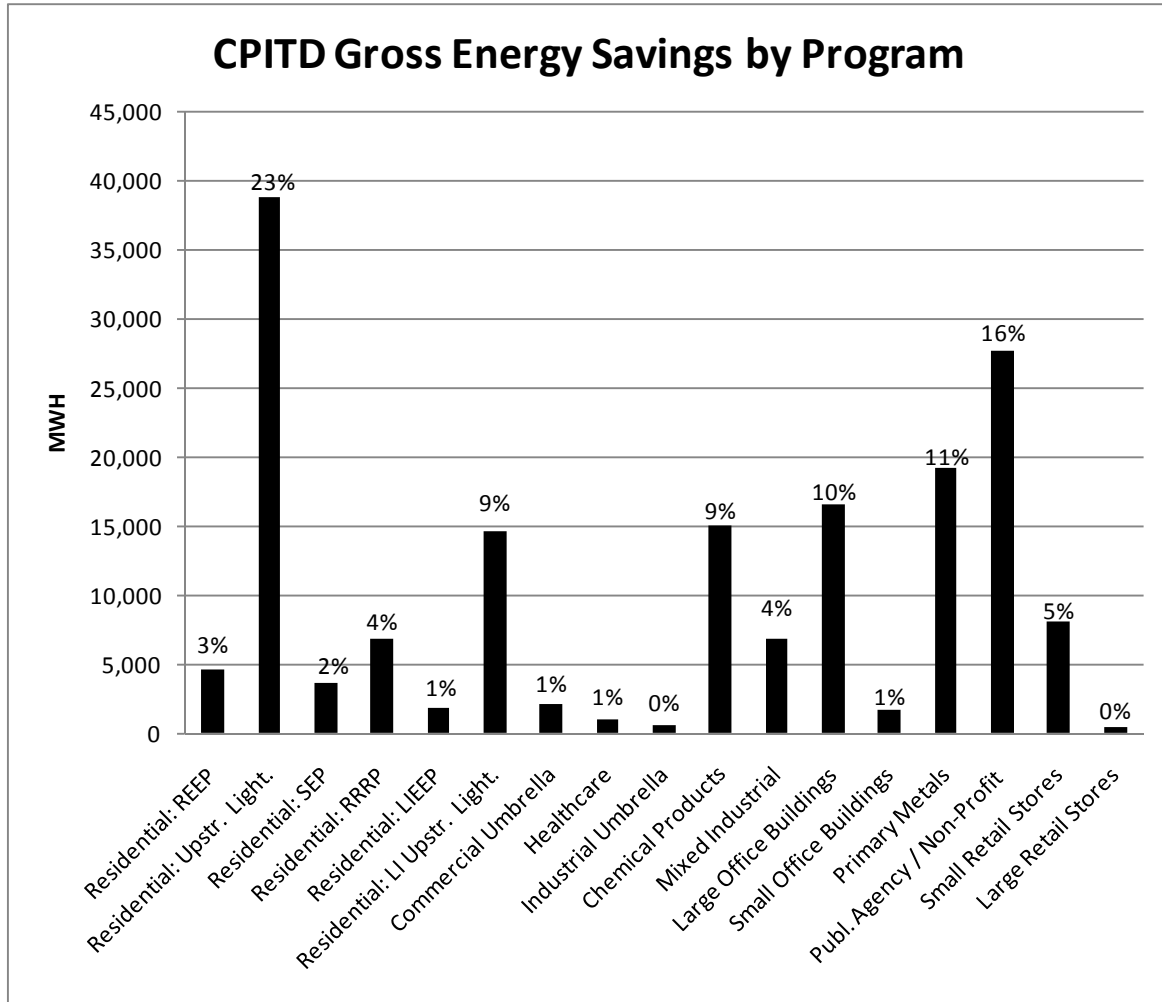
<sup>18</sup> In addition to the Preliminary PYTD Verified Impact, the residential and low income portions of the upstream lighting program, which are not subject to further verification requirements, resulted in energy savings of 36,503 MWh.



## 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: CPITD Reported Gross Energy Savings by Program through the End of the Reporting Period



A summary of energy impacts by program through the Program Year 2010 is presented in Table 1-4 and Table 1-5.

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

Program	Participants			Reported Gross Impact (MWh)		
	IQ	PYTD	CPITD	IQ	PYTD	CPITD
Residential: EE Program (REEP): Rebate Program	5,898	10,289	13,134	2,661	3,922	4,642
Residential: EE Program (Upstream Lighting)	N/A	N/A	N/A	5,893	38,808	38,808
Residential: School Energy Pledge	2,546	4,346	9,096	1,054	1,799	3,698
Residential: Appliance Recycling	724	3,605	3,854	1,280	6,449	6,896
Residential: Low Income EE	1,129	1,969	3,264	542	1,318	1,826
Residential: Low Income EE (Upstream Lighting)	N/A	N/A	N/A	14,573	14,573	14,573
Commercial Sector Umbrella EE	17	54	73	1,440	2,071	2,078
Healthcare EE	5	9	9	809	1,029	1,029
Industrial Sector Umbrella EE	1	3	3	123	587	587
Chemical Products EE	7	8	8	14,990	14,998	14,998
Mixed Industrial EE	29	38	38	5,652	6,899	6,899
Office Building – Large – EE	46	67	67	12,911	18,282	18,282
Office Building – Small EE	45	67	68	1,087	1,564	1,754
Primary Metals EE	14	19	19	18,560	21,635	21,635
Public Agency / Non-Profit	116	149	149	24,556	27,659	27,659
Retail Stores, Small EE	145	244	256	6,962	8,257	8,636
Retail Stores, Large EE	0	0	0	0	0	0
<b>TOTAL PORTFOLIO</b>	<b>10,722</b>	<b>20,867</b>	<b>30,038</b>	<b>113,092</b>	<b>169,851</b>	<b>174,001</b>

**Table 1-5: EDC Reported Gross Energy Savings by Program through the End of the Reporting Period**

Program	Unverified Ex Post Savings (MWh)	PYTD Total Committed (MWh)	EE&C Plan Estimate for Program Year (MWh)	Percent of Estimate Committed (%)
Residential: EE Program (includes upstream lighting) <sup>1</sup>		42,730	32,318	132%
Residential: School Energy Pledge		1,799	1,350	133%
Residential: Appliance Recycling		6,449	3,334	193%
Residential: Low Income EE (includes upstream lighting) <sup>1</sup>		15,891	8,587	185%
Commercial Sector Umbrella EE		2,071	5,363	39%
Healthcare EE		1,029	2,515	41%
Industrial Sector Umbrella EE		587	6,229	9%
Chemical Products EE		14,998	11,395	132%
Mixed Industrial EE		6,899	5,557	124%
Office Building – Large – EE		18,282	20,200	91%
Office Building – Small EE		1,564	10,635	15%
Primary Metals EE		21,635	17,139	126%
Public Agency / Non-Profit		27,659	24,985	111%
Retail Stores, Small EE		8,257	3,636	227%
Retail Stores, Large EE		0	8,765	0%
<b>TOTAL PORTFOLIO</b>	0	169,851	162,008	105%
<b>NOTES:</b>				
<sup>1</sup> Upstream lighting is separated into the REEP and low-income segments.				

A summary of evaluation verified energy impacts by program is presented in Table 1-6. Realization rates will be reported in the Program Year 2010 final report, delivered in November 2011.

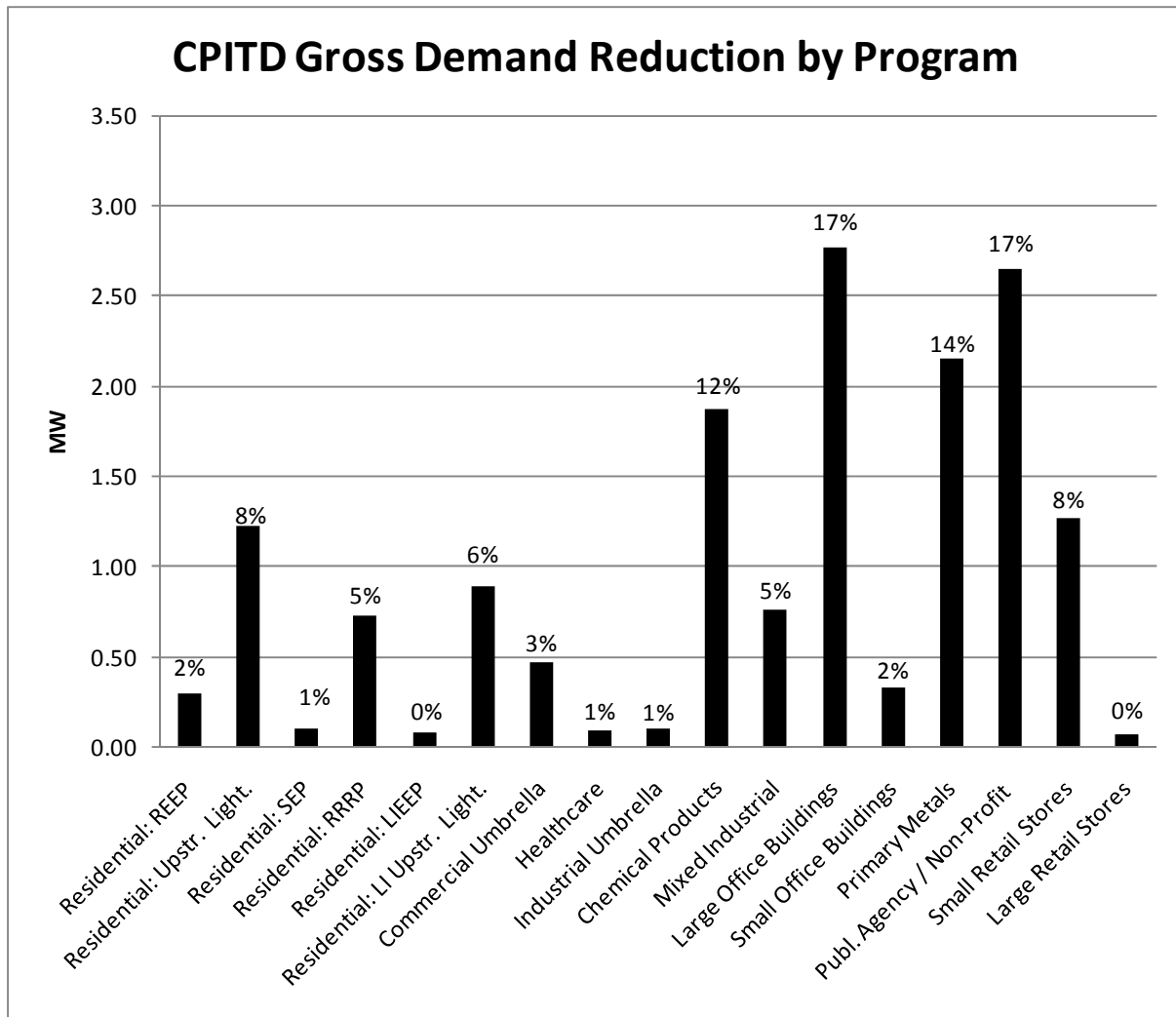
**Table 1-6: Verified Energy Savings by Program through the End of the Reporting Period**

Program	PYTD Reported Gross Impact (MWh)	Preliminary Realization Rate	Preliminary PYTD Verified Impact (MWh) <sup>1</sup>	Net-to-Gross Ratio	PYTD Net Impact (MWh) <sup>1</sup>
Residential: EE Program (REEP): Rebate Program	3,922	-	721	N/A	721
Residential: EE Program (Upstream Lighting)	38,808	-	16,878	N/A	16,878
Residential: School Energy Pledge	1,799	-	0	N/A	0
Residential: Appliance Recycling	6,449	-	3,522	N/A	3,522
Residential: Low Income EE	1,318	-	276	N/A	276
Residential: Low Income EE (Upstream Lighting)	14,573	-	0	N/A	0
Commercial Sector Umbrella EE	2,071	-	419	N/A	419
Healthcare EE	1,029	-	140	N/A	140
Industrial Sector Umbrella EE	587	-	464	N/A	464
Chemical Products EE	14,998	-	0	N/A	0
Mixed Industrial EE	6,899	-	399	N/A	399
Office Building – Large – EE	18,282	-	2,973	N/A	2,973
Office Building – Small EE	1,564	-	301	N/A	301
Primary Metals EE	21,635	-	464	N/A	464
Public Agency / Non-Profit	27,659	-	565	N/A	565
Retail Stores, Small EE	8,257	-	478	N/A	478
Retail Stores, Large EE	0	-	423	N/A	423
<b>TOTAL PORTFOLIO</b>	<b>169,851</b>	<b>-</b>	<b>28,023</b>	<b>N/A</b>	<b>28,023</b>
<b>NOTES:</b>					
<sup>1</sup> Values provided are as of PY2 Q2.					

### 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 End of the Reporting Period**



A summary of demand reduction impacts by program through the Program Year 2010 is presented in Table 1-7 and Table 1-8.

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

Program	Participants			Reported Gross Impact (MW)		
	IQ	PYTD	CPITD	IQ	PYTD	CPITD
Residential: EE Program (REEP): Rebate Program	5,898	10,289	13,134	0.177	0.322	0.365
Residential: EE Program (Upstream Lighting)	N/A	N/A	N/A	0.323	2.111	2.111
Residential: School Energy Pledge	2,546	4,346	9,096	0.035	0.060	0.774
Residential: Appliance Recycling	724	3,605	3,854	0.176	0.886	0.948
Residential: Low Income EE	1,129	1,969	3,264	0.030	0.103	0.251
Residential: Low Income EE (Upstream Lighting)	N/A	N/A	N/A	0.889	0.889	0.889
Commercial Sector Umbrella EE	17	54	73	0.339	0.507	0.508
Healthcare EE	5	9	9	0.067	0.097	0.097
Industrial Sector Umbrella EE	1	3	3	0.023	0.107	0.107
Chemical Products EE	7	8	8	1.868	1.870	1.870
Mixed Industrial EE	29	38	38	0.684	0.910	0.910
Office Building – Large – EE	46	67	67	2.330	2.866	2.866
Office Building – Small EE	45	67	68	0.262	0.322	0.364
Primary Metals EE	14	19	19	2.085	2.455	2.455
Public Agency / Non-Profit	116	149	149	2.546	3.030	3.030
Retail Stores, Small EE	145	244	256	1.182	1.350	1.427
Retail Stores, Large EE	0	0	0		0.000	
<b>TOTAL PORTFOLIO</b>	<b>10,722</b>	<b>20,867</b>	<b>30,038</b>	<b>13.016</b>	<b>17.885</b>	<b>18.971</b>

**Table 1-8: Reported Gross Demand Reduction by Program through the End of the Reporting Period**

<b>Program</b>	<b>Unverified Ex Post Savings (MW)</b>	<b>PYTD Total Committed (MW)</b>	<b>EE&amp;C Plan Estimate for Program Year (MW)</b>	<b>Percent of Estimate Committed (%)</b>
Residential: EE Program (includes upstream lighting)		2.433	15.965	15
Residential: School Energy Pledge		0.060	1.215	5
Residential: Appliance Recycling		0.886	0.831	107
Residential: Low Income EE (includes upstream lighting)		0.992	3.501	28
Commercial Sector Umbrella EE		0.507	1.151	44
Healthcare EE		0.097	0.388	25
Industrial Sector Umbrella EE		0.107	0.962	11
Chemical Products EE		1.870	2.445	76
Mixed Industrial EE		0.910	0.858	106
Office Building – Large – EE		2.866	4.400	65
Office Building – Small EE		0.322	1.940	17
Primary Metals EE		2.455	2.647	93
Public Agency / Non-Profit		3.030	7.278	42
Retail Stores, Small EE		1.350	0.780	173
Retail Stores, Large EE		0.000	1.881	0
<b>TOTAL PORTFOLIO</b>	0.000	17.885	46.241	39

A summary of evaluation adjusted demand impacts by program is presented in Table 1-9. Realization rates will be reported in the Program Year 2010 final report, delivered in November 2011.

**Table 1-9: Verified Demand Reduction by Program through the End of the Reporting Period**

Program	PYTD Reported Gross Impact (MW)	Preliminary Realization Rate	Preliminary PYTD Verified Impact (MW) <sup>1</sup>	Net-to-Gross Ratio	PYTD Net Impact (MW) <sup>1</sup>
Residential: EE Program (REEP): Rebate Program	0.322	-	0.091	N/A	0.091
Residential: EE Program (Upstream Lighting)	2.111	-	0.905	N/A	0.905
Residential: School Energy Pledge	0.060	-	0.000	N/A	0.000
Residential: Appliance Recycling	0.886	-	0.484	N/A	0.484
Residential: Low Income EE	0.103	-	0.030	N/A	0.030
Residential: Low Income EE (Upstream Lighting)	0.889	-	0.000	N/A	0.000
Commercial Sector Umbrella EE	0.507	-	0.128	N/A	0.128
Healthcare EE	0.097	-	0.019	N/A	0.019
Industrial Sector Umbrella EE	0.107	-	0.049	N/A	0.049
Chemical Products EE	1.870	-	0.000	N/A	-
Mixed Industrial EE	0.910	-	0.071	N/A	0.071
Office Building – Large – EE	2.866	-	0.316	N/A	0.316
Office Building – Small EE	0.322	-	0.063	N/A	0.063
Primary Metals EE	2.455	-	0.060	N/A	0.060
Public Agency / Non-Profit	3.030	-	0.099	N/A	0.099
Retail Stores, Small EE	1.350	-	0.084	N/A	0.084
Retail Stores, Large EE	0.000	-	0.058	N/A	0.058
<b>TOTAL PORTFOLIO</b>	<b>17.885</b>	<b>-</b>	<b>2.457</b>	<b>N/A</b>	<b>2.457</b>
<b>NOTES:</b>					
<sup>1</sup> Values provided are as of PY2 Q2.					



## 1.4 Summary of Evaluation

Realization rates are calculated to adjust reported savings based on statistically significant verified savings measured by independent evaluators. The realization rate is defined as the percentage of reported savings that is achieved, as determined through the independent evaluation review. A realization rate of 1 or 100% indicates no difference between the reported and achieved savings. Realization rates are determined by certain attributes relative to one of three protocol types. Fully deemed TRM measure realization rates are driven by differences in the number of installed measures. Partially deemed TRM measure<sup>19</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 as estimated at time of installation and savings as determined by the measurement and verification process.

Quarterly reports may not include realization rates reflecting full program-to-date activities due to ongoing M&V activity. The realization rates for the full program year will be reported in the Program Year 2010 final report.

### 1.4.1 Impact Evaluation

#### 1.4.1.1 Evaluation Groups

Per the utility's EM&V Plan<sup>20</sup>, for the purpose of conducting cost-effective EM&V, certain industrial and commercial programs grouped based on shared characteristics. Commercial sector retail, health care, large and small office and public agency partnership programs are similar enough in structure to be treated as one evaluation group<sup>21</sup>. All industrial programs function in a similar enough manner that they are treated as one evaluation group. Because of their unique program features, each residential program is evaluated independently. As illustrated in Table 1-10 below, this program level EM&V organization results in seven distinct Evaluation Groups.<sup>22</sup> Note that program theory and logic models have been developed for six of the seven Evaluation Groups.<sup>23</sup>

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<sup>19</sup> TRM measures with stipulated values and variables.

<sup>20</sup> Evaluation Measurement and Verification Plan, 2010-2012 Energy Efficiency & Conservation Programs, July 15, 2010 (EM&V Plan), sections 1.2.6 Program Level EM&V Organization, page 12.

<sup>21</sup> Note that in cases where the programs must be consolidated for practical M&V purposes, the sample data can be used to provide an unbiased estimate of the average savings per project for the program group. While average savings per project can be broken out for each program in the group, the precision will be lower due to the smaller sample sizes.

<sup>22</sup> EM&V Plan Table 1-7: Evaluation Groups, page 13.

<sup>23</sup> Upstream Lighting Program Theory and Logic Model have yet to be developed.

**Table 1-10: Evaluation Groups**

Evaluation Groups	Included Sub Programs
Residential: Appliance Recycling Program (RARP)	Single program group
Residential: Low Income Energy Efficiency Program (LIEEPP)	Single program group
Residential :Energy Efficiency Rebate Program (REEP)	Single program group
Residential: School Energy Pledge Program (SEP)	Single program group
Upstream Lighting Program	Residential Upstream Lighting and Low Income Upstream Lighting
Commercial	Umbrella, Small Office, Large Office, Health Care and Retail, Public Agency Partnerships/Education
Industrial	Umbrella, Primary Metals, Chemical Products and Mixed Industrials

In this section, for the residential, commercial and industrial programs, we describe the sample designs and methods used to produce *ex post* estimates of energy and demand impacts.

**Residential**

Below, we describe the approach used to produce *ex post* estimates of gross savings for the four residential programs.

**Estimation Approach**

For deemed measures for a given program, a method is needed to adjust, according to certain criteria, the total *ex ante* gross kWh and kW impacts in the participant population. The total *ex ante* gross kWh (or kW) impact for a given PMRS record is defined as the claimed units installed multiplied by the unit energy savings (UES). Such measures will receive the basic level of rigor. Within the verification approach for deemed measures, there are two sub-levels of rigor, basic and enhanced. The level of rigor depends on the size of the savings. The basic level of rigor is used for measures for which the rebate is less than \$2,000. The enhanced level of rigor is reserved for measures for which the rebate is equal to or greater than \$2,000.

The basic level of verification rigor methods for TRM deemed measures involves two basic steps:

1. Survey on a random sample of participants to verify installations and estimate realization (or verification) rates.
2. The claimed *ex ante* gross kWh and kW impacts for each PMRS record in the population from which the sample was drawn are then multiplied by this verification rate.

The basic verification used for TRM deemed measures consists of a six-step process:

**Step 1.** The verification checklist for deemed savings measures includes data downloaded from PMRS and/or taken from hardcopy documentation for each participant installation or can be obtained by telephone or on-site visit. The verification checklist for deemed savings measures includes:

1. Participant has valid utility account number
2. Measure(s) is on approved list and all parameters necessary for calculating savings are present.
3. Proof of purchase identifies qualifying measure and is dated within the period being verified.
4. Rebate payment date is in the current program period being verified (for residential rebates).
5. Unit kWh and kW are correct for each listed measure.
6. Measure was actually installed at the customer site (telephone survey for basic level of rigor).

**Step 2.** A simple random sample of participants is selected from the PMRS database.

**Step 3.** Relevant documentation for item #1 through #5 from PMRS or other hardcopy documentation is then obtained for each sampled PMRS record.

**Step 4.** Next, with respect to the sixth criterion, telephone interviews are conducted with each sampled customer to confirm that they participated in the program, received the rebate, and purchased and installed the efficient measure.

**Step 5.** Using the data collected from program files and telephone surveys, a verification rate (VR) is calculated. The VR is a function of three separate parameters:

1. sample-based program-qualifier rate (PQ),
2. a clerical adjustment rate (CAR), and
3. an installation rate (IR).

The **PQ** is a function of whether the first four criteria were all met. If a sampled participant record did not meet all four criteria, the PQ would be set to zero. If a sampled participant record met all four criteria, the PQ would be set to one.

Per the fifth criterion, for each sampled case, the unit kWh and kW for each PMRS measure are reviewed to make sure that they are consistent with agreed-upon deemed values. A CAR, which is simply the ratio of verified deemed values to PMRS deemed values, is then calculated. Note in the original EM&V plan, the CAR was referred to as the realization rate (RR). MCR Performance Solutions chose to use CAR rather than RR since the level of EM&V rigor associated with the CAR is far less than that typically associated with a realization rate.

Per the sixth criterion, telephone interviews are conducted to verify that the measure was in fact installed. The results of the telephone interviews are used to calculate the installation rate (**IR**), which is the ratio of the telephone-verified installations to the PMRS installations.

For each sampled record, the **VR** is then calculated as: **PQ x CAR x IR**. The VR is the ratio of ex post verified savings to the ex ante savings. Expectations regarding this ratio form the basis of the sample design.

Finally, across all sampled records, two **weighted average VRs** are calculated. One average VR is weighted by total gross *ex ante* kWh impacts for each record. The second VR is weighted by the total

gross *ex ante* kW impacts for each record. For a given sampled PMRS record, the total *ex ante* gross kWh and kW impacts are simply the unit energy savings (UES) multiplied by the units installed.

**Step 6.** The final step involves multiplying the total gross *ex ante* kWh and kW impacts for each record in the PMRS population from which the sample was drawn by the kWh-weighted average VR and the kW-weighted average VR, respectively.

#### **1.4.1.2 Sample Design: LIEEP, REEP, RARP and SEP**

Starting with the first quarter report, a change was made to the original sample designs for the LIEEP and RARP Programs presented in the 2010-2012 Energy Efficiency & Conservation Program. For the RARP and LIEEP Programs, the change involved moving from a stratified ratio estimator to a simple ratio estimator. All residential programs now use the simple ratio estimator.

The reasons for moving to a simple ratio estimator were that the vast majority of the measures installed in these three residential programs were TRM deemed. This meant that the savings were subjected to the basic level of rigor that involved only the verification of installations. The only changes to the estimated gross savings in PMRS would be due to clerical errors, which were expected to be minor. Neither the installation rates nor the rate of clerical errors were expected to vary by measure/end use making stratification unnecessary. The resulting verification rate (the ratio of the *ex post* savings to the *ex ante* savings) was therefore expected to be very high with a very low variance. Even though stratification was unnecessary, the estimated ratios were post-stratified by the measures/end uses that comprise each program so that the performance of each measure/end-use can be reported.

#### **1.4.1.3 Commercial Program Group Sample Design**

The sample design for the Commercial Program Group uses a stratified ratio estimator. As described in the 2010-2012 Energy Efficiency & Conservation Program (EM&V Plan), a stratified ratio estimator is used to adjust the *ex ante* savings contained in PMRS. The approach is similar to that used for the REEP, RARP and LIEEP Programs except that the sample is stratified rather than a simple random sample. That is, the stratified ratio estimation method combines a stratified sample design with a ratio estimator. Both stratification and ratio estimation take advantage of information that is reported in the PMRS tracking system for each project in the program. The two key parameters in the stratified ratio estimate are a) the ratio between *ex post* (denoted as the “Y” variable) and *ex ante* (denoted as the “X” variable) and b) the error ratio. The ratio between *ex post* and *ex ante*, also referred to as the realization rate, measures the accuracy of the tracking estimates from project to project across the sample of projects. The error ratio is a measure of the variability in the relationship between the *ex post* and *ex ante* estimates. Both ratios help to define the relationship between the tracking estimates of savings and the actual project savings.

Ratios are calculated within each stratum and strata weights are applied to arrive at a program-level ratio. A stratum is a subset of the projects in the population that are grouped together based on *ex ante* savings that are known information. In other words, a stratification of the population into strata is a classification of all units in the population into mutually exclusive strata that span the population. Under this design, each stratum is sampled according to simple random sampling protocols and the weighted estimates of parameters are then applied to the entire population.

Per the utility's EM&V Plan<sup>24</sup>, for measures with rebates less than \$2,000, the basic level of verification rigor was employed. The enhanced level of rigor verification was applied when measure rebates were equal to or greater than \$2,000.

Basic Level of Rigor Verification: For Commercial programs, the basic level of verification rigor includes obtaining and analyzing hardcopy and electronic documentation for each sampled participant installation. Interviews are conducted with designated customer contacts, as well as facility managers, program implementers, equipment suppliers and installation contractors to verify project documentation. Where documentation is inadequate, secondary research is conducted to ascertain required pre- and post equipment definition as well as operating conditions. Project planning documentation is compared with applicable TRM deemed and partially deemed measure values and algorithm inputs. Given review of the aforementioned, reported *ex ante* savings are assessed, corroborated or revised to reflect assessment findings.

Enhanced Level of Rigor Verification: Enhanced rigor verification includes an analysis of utility tracking system data, an analysis of project file hardcopy and electronic documentation, and on- site verification of installed equipment. Sample sets are selected for the commercial and industrial sector evaluation groups as described above and in Section 4 Portfolio Results by Program. Where required, equipment is verified on-site by sampling to achieve 90% confidence/20% precision consistent with guidelines prescribed in Audit Plan and Evaluation Framework for PA Act 129 Energy Efficiency and Conservation Programs (Audit Plan)<sup>25</sup>. Interviews are conducted with designated customer contacts, as well as facility managers, program implementers, equipment suppliers and installation contractors. Building configuration and business operations are researched to confirm key savings determinants such as operating hours and the presence or absence of space cooling or refrigeration. Where documentation is inadequate, secondary research is conducted to ascertain required pre- and post equipment definition as well as operating conditions.

Auditor's notes for selected commercial and industrial sector projects will be provided starting with the Program Year 2010 final report, delivered in November 2011.

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<sup>24</sup> Evaluation Measurement and Verification Plan, 2010-2012 Energy Efficiency & Conservation Programs, July 15, 2010 (EM&V Plan), sections 2.5 and 2.5.1, pages 21 and 22.

<sup>25</sup> GDS Associates, Inc., Nextant, & Mondre Energy, Audit Plan and Evaluation Framework for Pennsylvania Act 129 Energy Efficiency and Conservation Programs. December 1, 2009.

**1.4.1.4 Industrial Program Group Sample Design**

The industrial sample design is divided into two components, custom and deemed. The sample unit is a project completed by the same customer on the same date. The level of verification rigor and estimation of realization rates is the same as for the commercial program group.

**1.4.1.5 Achieved Confidence and Precision**

For the plan year up to and including the second quarter, sample sizes, realization rates and achieved precision at the 90% level of confidence for each program are presented in Table 1-11 below:

**Table 1-11: Summary of Realization Rates and Confidence Intervals for kWh and kW<sup>26</sup>**

Program	PYTD Sample Participants	Program Year Sample Participant Target	Preliminary Realization Rate for kWh	Confidence and Precision for kWh	Preliminary Realization Rate for kW	Confidence and Precision for kW
Residential: EE Rebate	40	65	0.90	90% /± 0.117%	0.98	90% /± 0.030%
Residential: School Energy Pledge	0	55	0.97	90% /± 4.700%	0.97	90% /± 4.700%
Residential: Appliance Recycling	29	55	1.00	N/A	1.00	N/A
Residential: Low Income EE	30	55	1.00	N/A	1.00	N/A
Commercial Program	38	64	0.86	90% /± 0.026%	0.74	90% /± 0.082%
Industrial Program: Deemed	7	9	1.00	N/A	1.00	N/A
Industrial Program: Custom	2	17	0.90	N/A	0.90	N/A
TOTAL PORTFOLIO	146	320				

**1.4.2 Process Evaluation**

Results of the 2010 Program year (Year 2) process evaluation will be included in the final Program Year 2 evaluation report delivered in November 2011.

<sup>26</sup> Summary of Realization Rates and Confidence Intervals through PY2 Q2.

## 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. A breakdown of the portfolio finances is presented in Table 1-12.

**Table 1-12: Summary of Portfolio Finances: TRC Test<sup>27</sup>**

	Category	IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	\$3,354,962	\$5,601,928	\$5,838,744
A.2	EDC Incentives to Trade Allies	0	0	91,877
A	<b>Subtotal EDC Incentive Costs</b>	3,354,962	5,601,928	5,930,621
B.1	Design & Development	0	487,291	3,481,106
B.2	Administration	0	0	0
B.3	Management	3,173,837	6,257,801	6,567,203
B.4	Marketing	204,264	527,310	724,361
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	3,378,101	7,272,402	10,772,670
C	<b>EDC Evaluation Costs</b>	190,178	371,216	455,216
D	<b>SWE Audit Costs</b>	0	500,000	791,879
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	6,923,241	13,745,546	17,950,386
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>	0	0	0
<b>NOTES:</b>				
*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.				

<sup>27</sup> Definitions for terms in following table are subject to TRC Order. Various cost and benefit categories are subject to change pending the outcome of TRC Technical Working Group discussions.

The TRC for each program is presented in Table 1-13.

**Table 1-13: Summary of Portfolio Budget by Program**

<b>Program</b>	<b>TRC Benefits (\$)</b>	<b>TRC Costs (\$)</b>	<b>TRC Benefit-Cost Ratio</b>
Residential: EE Rebate*			
Residential: School Energy Pledge*			
Residential: Appliance Recycling*			
Residential: Low Income EE*			
Commercial Sector Umbrella EE*			
Office Building – Small EE*			
Retail Stores EE*			
<b>Portfolio</b>			
<b>NOTES:</b>			

*\*Per direction from the SWE on 9-13-2010, no TRC values are provided for the Preliminary Annual PY2 report.*



## 2 Portfolio Results by Sector

The EE&C Implementation Order issued on January 15<sup>th</sup>, 2009 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**

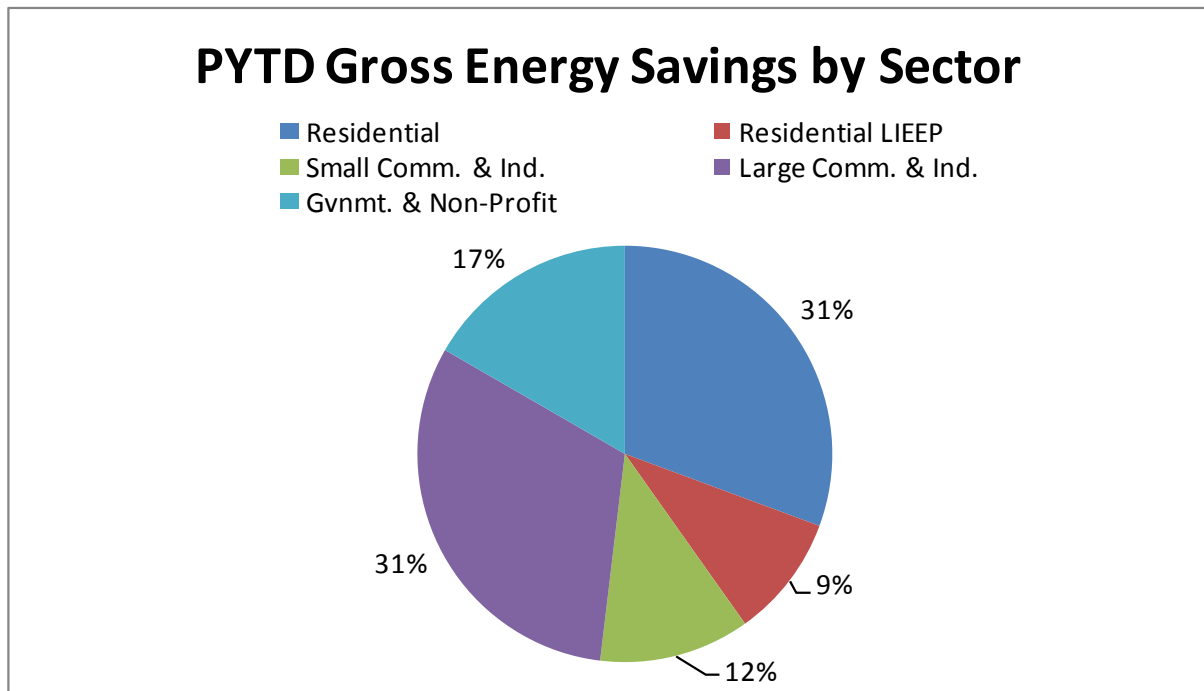
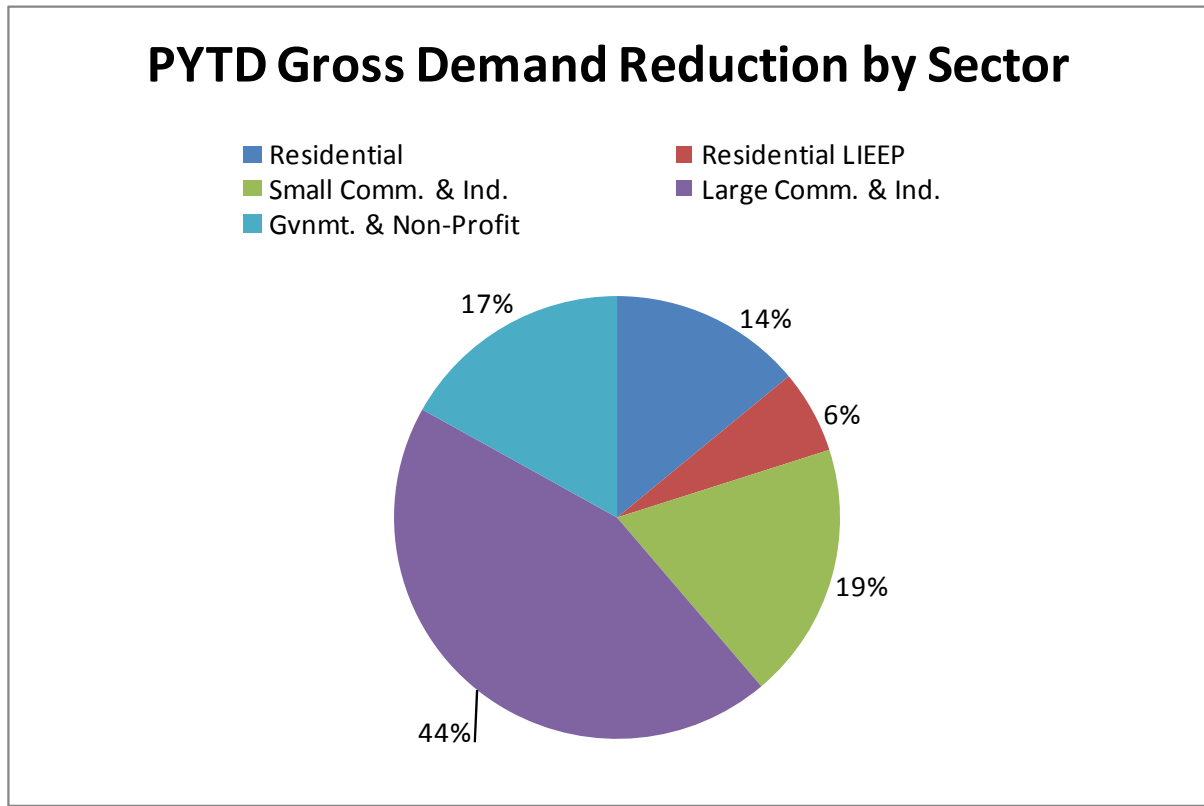


Figure 2-2: PYTD Reported Gross Demand Reduction by Sector



Energy savings by sector are presented in Table 2-1.

**Table 2-1: Reported Gross Energy Savings by Sector for the Incremental Quarter**

Market Sector	Reported Gross Impact (MWh)			Total Committed	Unverified Ex Post Savings <sup>1</sup>
	IQ	PYTD	CPITD		
Residential EE	10,888	50,979	54,045	54,045	0
Residential Low-Income EE	15,115	15,891	16,399	16,399	0
Small Commercial & Industrial EE	15,263	19,379	19,954	19,954	0
Large Commercial & Industrial EE	47,270	55,945	55,945	55,945	0
Government & Non-Profit EE	24,556	27,659	27,659	27,659	0
<b>TOTAL PORTFOLIO</b>	113,092	169,851	174,001	174,001	0
<b>NOTES:</b>					
<sup>1</sup> Unverified Ex Post Savings are unverified savings pending approval of a TRM or Custom Measure Protocol by the Commission.					

Demand reductions by sector are presented in Table 2-2.

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

Market Sector	Reported Gross Impact (MW)			Total Committed	Unverified Ex Post Savings <sup>1</sup>
	IQ	PYTD	CPITD		
Residential EE	0.711	3.379	4.197	4.197	0.000
Residential Low-Income EE	0.919	0.992	1.140	1.140	0.000
Small Commercial & Industrial EE	2.490	3.196	3.316	3.316	0.000
Large Commercial & Industrial EE	6.351	7.288	7.288	7.288	0.000
Government & Non-Profit EE	2.546	3.030	3.030	3.030	0.000
<b>TOTAL PORTFOLIO</b>	13.016	17.885	18.971	18.971	0.000
<b>NOTES:</b>					
<sup>1</sup> Unverified Ex Post Savings are unverified savings pending approval of a TRM or Custom Measure Protocol by the Commission.					

## 2.1 Residential EE Sector

The annual sector target for plan year 2010 energy savings is 37,002 MWh and the sector target for annual peak demand reduction is 18.0 MW.

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

**Table 2-3: Summary of Residential EE Sector Incremental Impacts by Program for the Incremental Quarter**

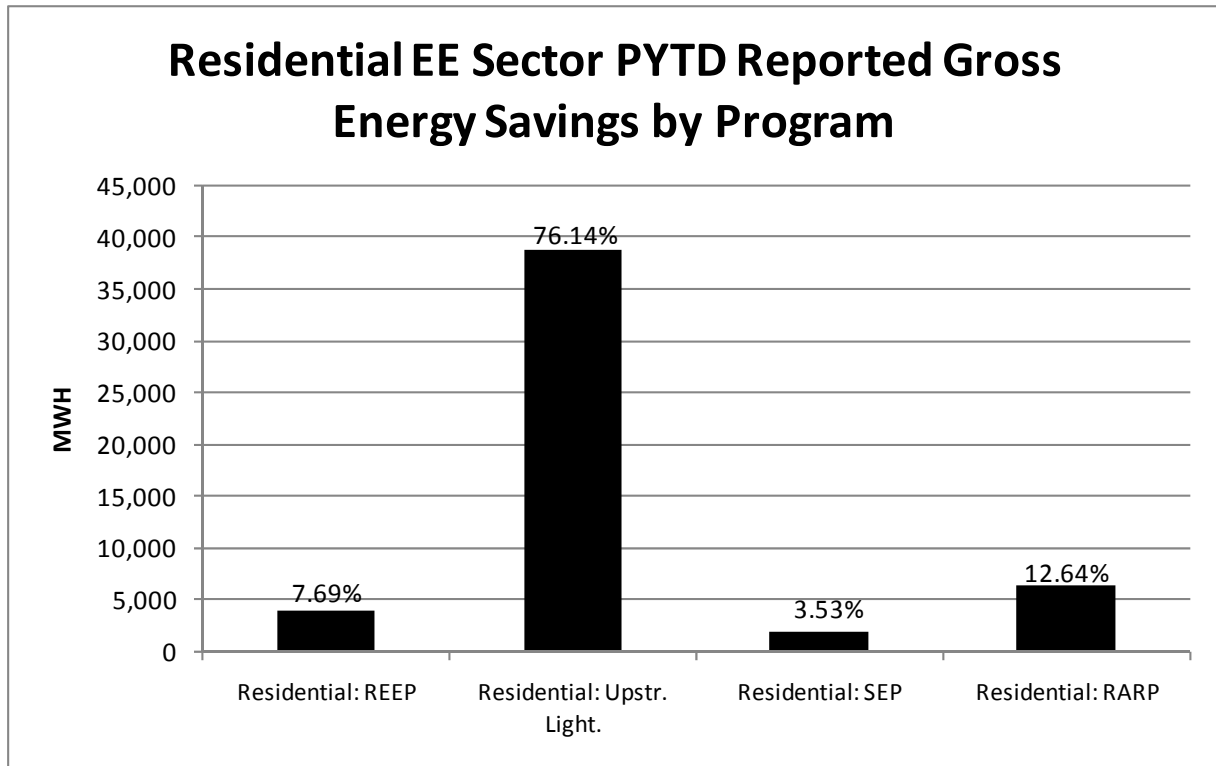
Residential EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWh)	IQ Reported Gross Demand Reduction (MW)
Residential: EE Program (REEP): Rebate Program	5,898	2,661	0.177
Residential: EE Program (Upstream Lighting)	N/A	5,893	0.323
Residential: School Energy Pledge	2,546	1,054	0.035
Residential: Appliance Recycling	724	1,280	0.176
<b>Sector Total</b>	<b>9,168</b>	<b>10,888</b>	<b>0.711</b>
<b>NOTES:</b>			
124,997 CFLs were distributed under the upstream lighting program in PY2 Q4.			

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

Residential EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
Residential: EE Program (REEP): Rebate Program	10,289	3,922	0.322
Residential: EE Program (Upstream Lighting)	N/A	38,808	2.111
Residential: School Energy Pledge	4,346	1,799	0.060
Residential: Appliance Recycling	3,605	6,449	0.886
<b>Sector Total</b>	<b>18,240</b>	<b>50,979</b>	<b>3.379</b>

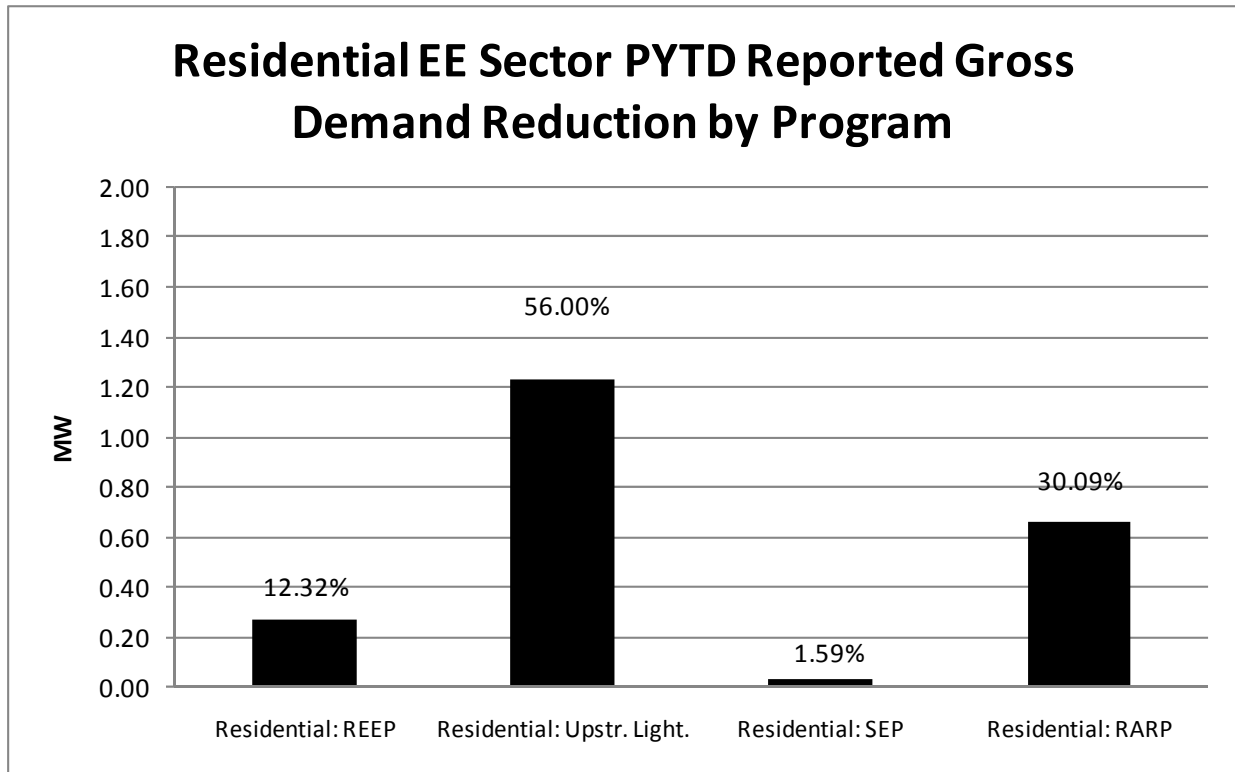
A summary of the sector energy savings by program is presented in Figure 2-3.

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



A summary of the sector demand reduction by program is presented in Figure 2-4.

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



## 2.2 Residential Low-Income EE Sector

The annual sector target for plan year 2010 energy savings is 8,587 MWh and the sector target for annual peak demand reduction is 3.5 MW.

Commencing in Q4, a portion of the Upstream Lighting program is allocated to the Low Income sector based on the portion of DLC’s households that are low-income. The Q4 result for the low income sector includes 27.3% of the entire Upstream Lighting program to date savings.

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

**Table 2-5: Summary of Residential Low-Income EE Sector Incremental Impacts by Program for the Incremental Quarter**

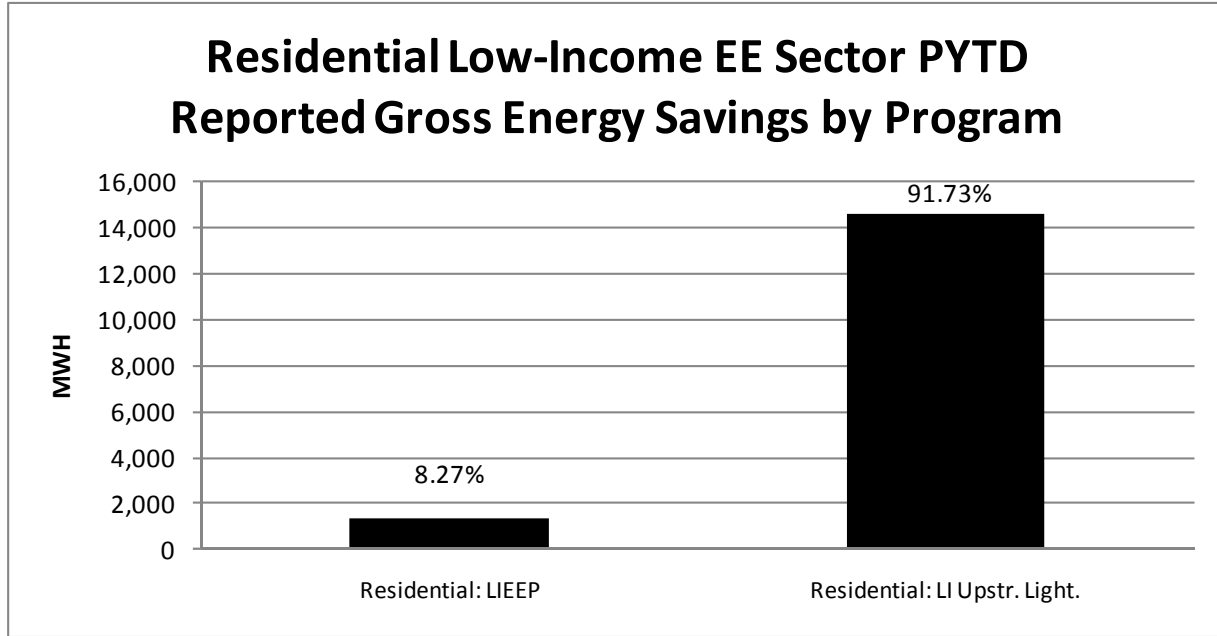
Residential Low-Income EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWh)	IQ Reported Gross Demand Reduction (MW)
Residential: Low Income EE	1,129	542	0.030
Residential: Low Income EE (Upstream Lighting)	N/A	14,573	0.889
<b>Sector Total</b>	1,129	15,115	0.919
NOTES			
304,001 CFLs were distributed under the upstream lighting program in PY2 Q4.			

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

Residential Low-Income EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
Residential: Low Income EE	1,969	1,318	0.103
Residential: Low Income EE (Upstream Lighting)	N/A	14,573	0.889
<b>Sector Total</b>	1,969	15,891	0.992

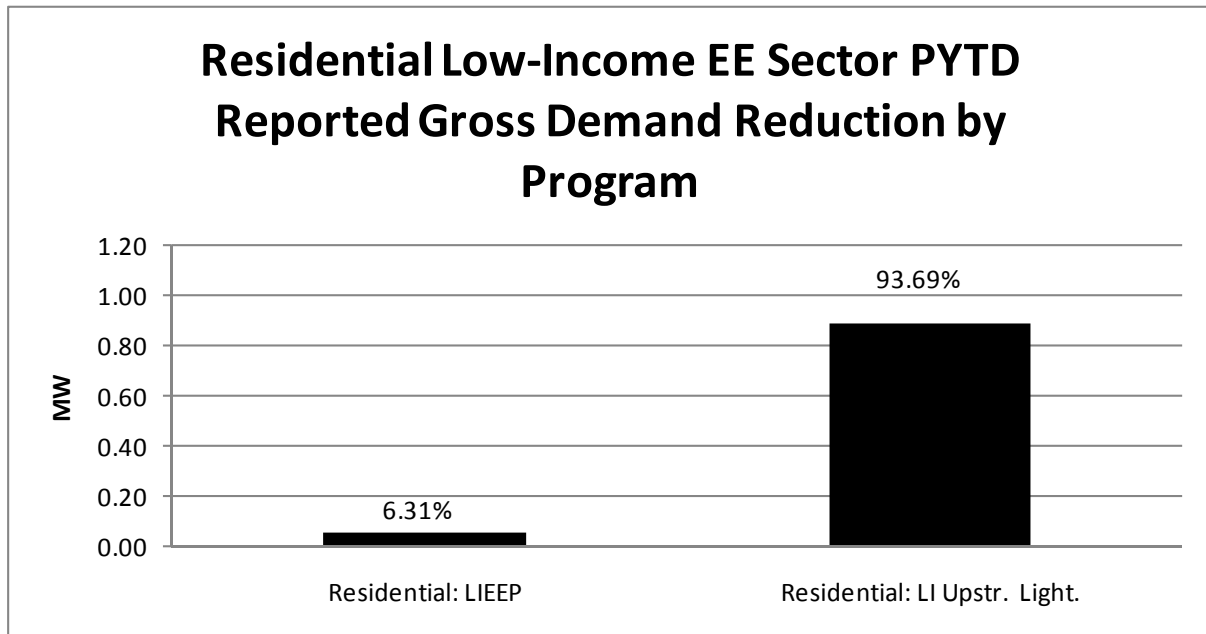
A summary of the sector energy savings by program is presented in Figure 2-5.

**Figure 2-5: Summary of Residential Low-Income EE Sector PYTD Reported Gross Energy Savings by Program**



A summary of the sector demand reduction by program is presented in Figure 2-6.

**Figure 2-6: Summary of Residential Low-Income EE Sector PYTD Reported Demand Reduction by Program**





### 2.3 Small Commercial & Industrial EE Sector

The annual sector target for plan year 2010 energy savings is 31,419 MWh and the sector target for annual peak demand reduction is 5.7 MW.

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

**Table 2-7: Summary of Small Commercial & Industrial EE Sector Incremental Impacts by Program for the Incremental Quarter**

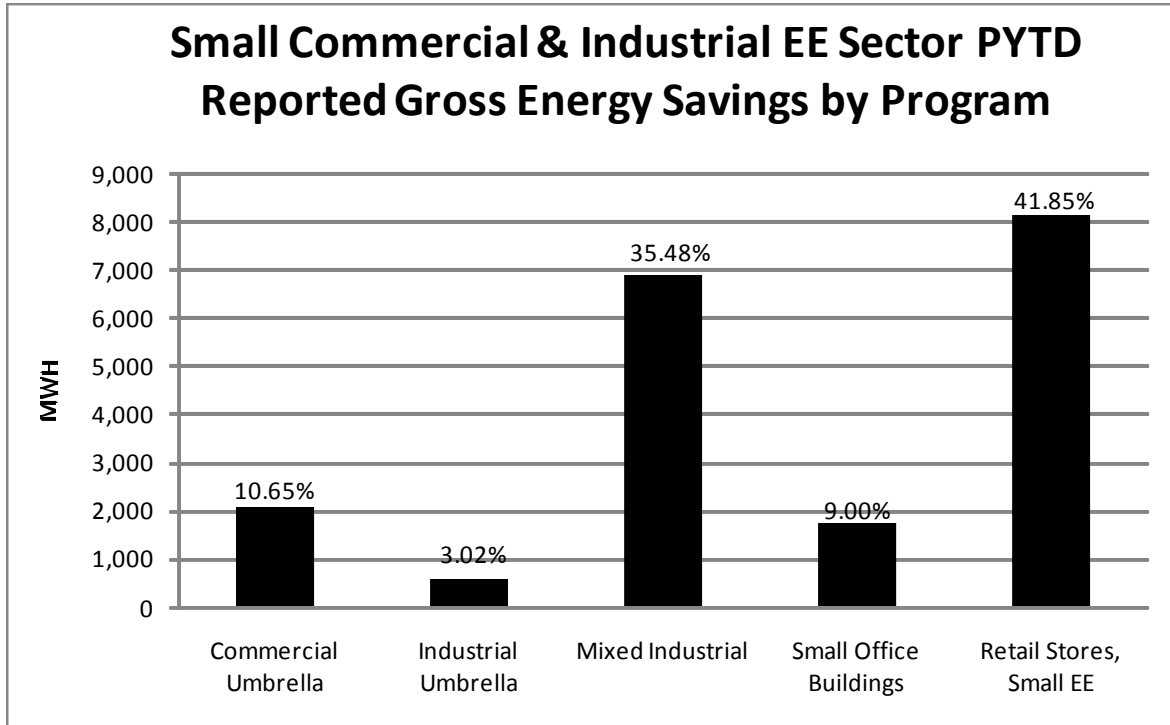
Small Commercial & Industrial Sector	IQ Participants	IQ Reported Gross Energy Savings (MWh)	IQ Reported Gross Demand Reduction (MW)
Commercial Sector Umbrella EE	17	1,440	0.339
Industrial Sector Umbrella EE	1	123	0.023
Mixed Industrial EE	29	5,652	0.684
Office Building – Small EE	45	1,087	0.262
Retail Stores, Small EE	145	6,962	1.182
<b>Sector Total</b>	<b>237</b>	<b>15,263</b>	<b>2.490</b>

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

Small Commercial & Industrial EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
Commercial Sector Umbrella EE	54	2,071	0.507
Industrial Sector Umbrella EE	3	587	0.107
Mixed Industrial EE	38	6,899	0.910
Office Building – Small EE	67	1,564	0.322
Retail Stores, Small EE	244	8,257	1.350
<b>Sector Total</b>	<b>406</b>	<b>19,379</b>	<b>3.196</b>

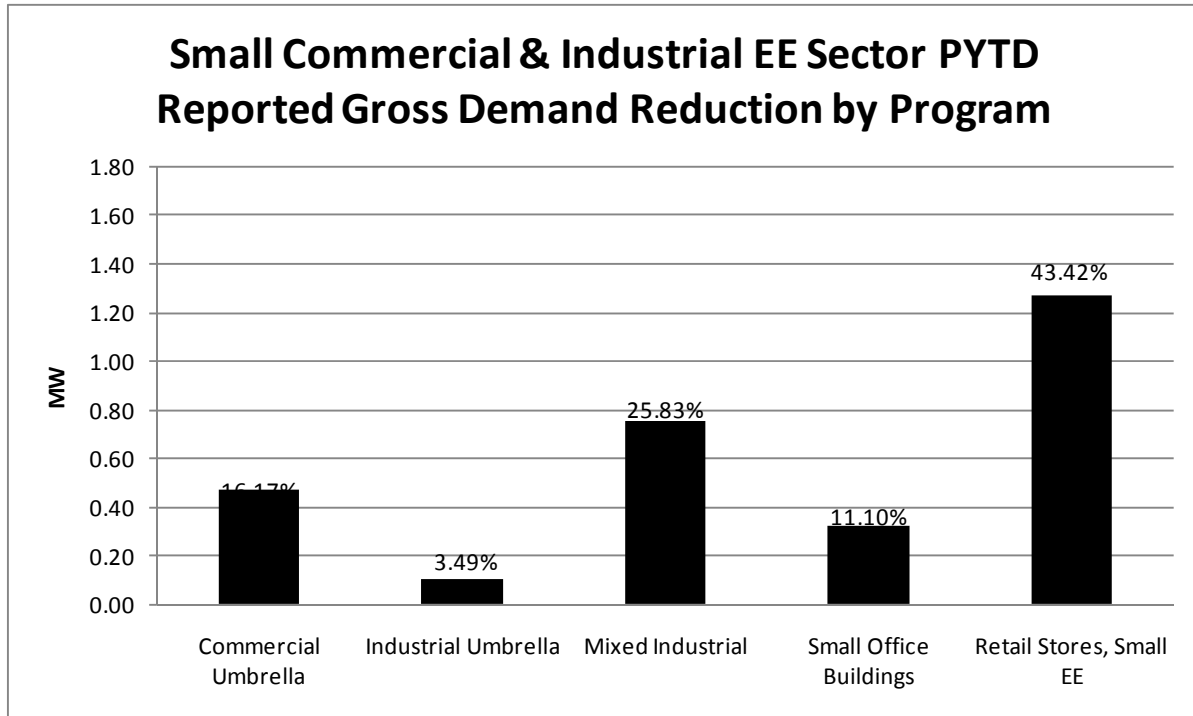
A summary of the sector energy savings by program is presented in Figure 2-7.

**Figure 2-7: Summary of Small Commercial & Industrial EE Sector PYTD Reported Gross Energy Savings by Program**



A summary of the sector demand reduction by program is presented in Figure 2-8.

**Figure 2-8: Summary of Small Commercial & Industrial EE Sector PYTD Reported Demand Reduction by Program**



## 2.4 Large Commercial & Industrial EE Sector

The annual sector target for plan year 2010 energy savings is 60,015 MWh and the sector target for annual peak demand reduction is 11.8 MW.

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

**Table 2-9: Summary of Large Commercial & Industrial EE Sector Incremental Impacts by Program for the Incremental Quarter**

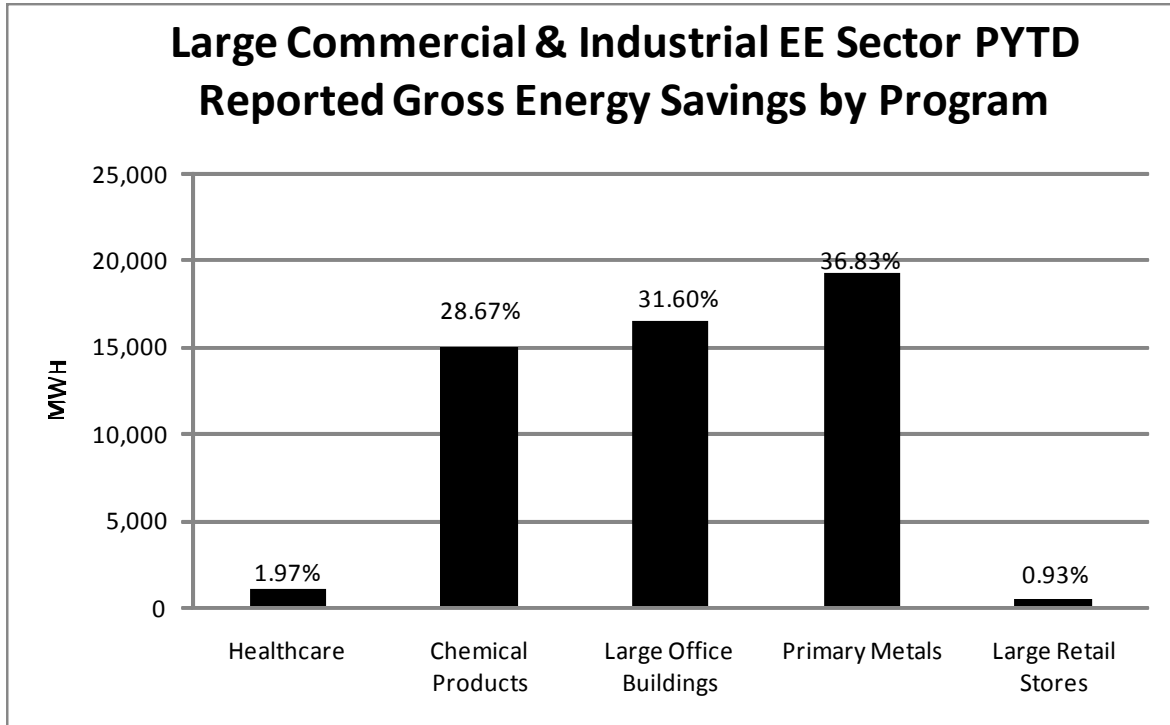
Large Commercial & Industrial Sector	IQ Participants	IQ Reported Gross Energy Savings (MWh)	IQ Reported Gross Demand Reduction (MW)
Healthcare EE	5	809	0.067
Chemical Products EE	7	14,990	1.868
Office Building – Large – EE	46	12,911	2.330
Primary Metals EE	14	18,560	2.085
Retail Stores, Large EE	0	0	0.000
<b>Sector Total</b>	<b>72</b>	<b>47,270</b>	<b>6.351</b>

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

Large Commercial & Industrial Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	IQ Reported Gross Demand Reduction (MW)
Healthcare EE	9	1,029	0.097
Chemical Products EE	8	14,998	1.870
Office Building – Large – EE	67	18,282	2.866
Primary Metals EE	19	21,635	2.455
Retail Stores, Large EE	0	0	0.000
<b>Sector Total</b>	<b>103</b>	<b>55,945</b>	<b>7.288</b>

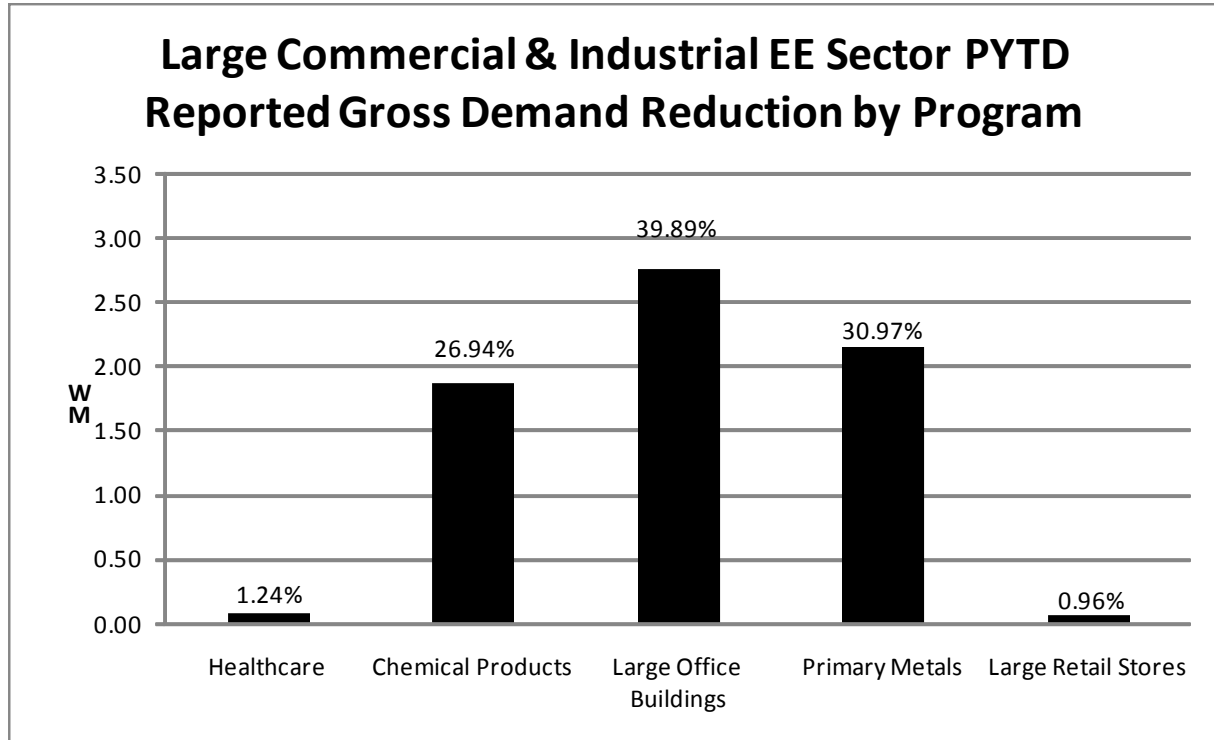
A summary of the sector energy savings by program is presented in Figure 2-9.

**Figure 2-9: Summary of Large Commercial & Industrial EE Sector PYTD Reported Gross Energy Savings by Program**



A summary of the sector demand reduction by program is presented in Figure 2-10.

**Figure 2-10: Summary of Large Commercial & Industrial EE Sector PYTD Reported Demand Reduction by Program**



The large commercial and industrial sector includes an overall umbrella program structure and specialized programs designed to promote specific technologies or target specific market segments while incorporating the umbrella program savings impacts and incentive levels.

The large commercial and industrial programs are designed to provide a comprehensive approach to energy savings and permanent demand reduction, and address a full range of efficiency opportunities (from low cost improvements to entire system upgrades) with Duquesne Light customers. Each sub-program provides the following services:

1. Targeted and comprehensive on-site walk-through assessments and professional grade audits to identify energy savings opportunities.
2. Efficiency studies/reports that detail process and equipment upgrades that present the greatest potential for energy/cost savings.
3. Support to access rebates and incentives available across electric measures designed to help defray upfront costs of installing the equipment.
4. Coordination with local chapters of key industry associations to promote energy efficiency improvements through trusted sources and encourage market-transforming practices among equipment vendors and purchasers.

Duquesne Light has chosen the following Conservation Service Providers (CSPs) to implement large commercial and industrial sector programs:

1. Primary Metals and Large Offices: Roth Bros, Inc. and Enerlogics Networks, Inc.
2. Chemical Products: Global Energy Partners, LLC
3. Mixed Industrial: Global Energy Partners, LLC
4. Large Retail: All Facilities Energy Group

## 2.5 Government & Non-Profit EE Sector

The annual sector target for plan year 2010 energy savings is 24,985 MWh and the sector target for annual peak demand reduction is 7.3 MW.

A sector summary of results by program is presented in Table 2-11 and Table 2-12.

**Table 2-11: Summary of Government & Non-Profit EE Sector Incremental Impacts by Program for the Incremental Quarter**

Governmental/Non-Profit EE Sector	IQ Participants	IQ Reported Gross Energy Savings (MWh)	IQ Reported Gross Demand Reduction (MW)
Public Agency / Non-Profit	116	24,556	2.546
<b>Sector Total</b>	116	24,556	2.546

**Table 2-12: Summary of Government & Non-Profit EE Sector PYTD Impacts by Program through the End of the Reporting Period**

Governmental/Non-Profit EE Sector	PYTD Participants	PYTD Reported Gross Energy Savings (MWh)	PYTD Reported Gross Demand Reduction (MW)
Public Agency / Non-Profit	149	27,659	3.030
<b>Sector Total</b>	149	27,659	3.030

A visual summary chart of the sector energy savings and demand reduction by program is not warranted because only one program exists within the sector.

The Public Agency Partnerships program targets federal, state and local governments, including municipalities, school districts, institutions of higher education and nonprofits (per Act 129).

Local Government Partnerships were established through execution of a memorandum of understanding (MOU) by and between Duquesne and selected local governmental agencies. The MOU established working groups comprised of Duquesne and agency representatives and: identifies project areas within agency departments (and jurisdictional agencies); defines project scopes of service; and establishes project agreements to co-fund agreed-to projects. Partnership agreements have been structured with Allegheny County and the City of Pittsburgh.

Bi-monthly meetings have been occurring with the officials from Allegheny County and Duquesne Light which have partnered to provide over 100 municipalities the opportunity to have audits performed in their county facilities and provide opportunities to take action to save energy, money and the environment by participating in Watt Choices.

In addition, several institutions of higher education have executed MOUs and have been involved in discussions and currently there are dozens of projects being evaluated as a result of these types of partnerships.



### **3 Demand Response**

On May 9, 2011, Duquesne filed a petition asking that the Commission approve a proposed change to eliminate the residential and small/midsized commercial and industrial ("C&I") air conditioning cycling demand response ("DR") programs as they are not cost effective. The resulting funds from the residential DR program are proposed to be shifted to the existing residential energy efficiency programs and held in reserve until Duquesne determines the most prudent use of the funds for the residential customers and files with this Commission for approval to expend those funds in a particular program(s). The resulting funds from the small/midsized C&I DR are proposed to be shifted into the existing Large C&I DR program, which has shown very cost effective demand reductions.

## **4 Portfolio Results by Program**

Duquesne Light prepared a comprehensive Evaluation Measurement and Verification Plan for its 2010-2012 Energy Efficiency & Conservation Programs (EM&V Plan). This EM&V Plan was reviewed by the Statewide Evaluator (SWE) and serves as the basis for EM&V performed of its Act 129 Programs. Additionally, Duquesne Light prepared a PY 2009 EM&V Report that was submitted and reviewed by the SWE. Both the EM&V Plan and PY 2009 EM&V Report went through a comment process with the SWE, whereby final comments were received and incorporated on August 31, 2010. These SWE reviewed and approved documents serve as the basis for EM&V activity performed and are referred to in the following sections.

### **4.1 Residential: Energy Efficiency Rebate Program**

The Residential Energy Efficiency Rebate Program (REEP) is designed to encourage customers to make an energy efficient choice when purchasing and installing household appliance and equipment measures by offering customers educational materials on energy efficiency options and rebate incentive offerings. Program educational materials and rebates are provided in conjunction with an on-line survey. REEP also provides energy efficiency measures in the form of energy efficiency kits provided free of charge to Duquesne Light customers attending targeted community outreach events.

An upstream/midstream CFL program was initiated July 2010 with several targeted area retail establishments. This program provides point of purchase discounts for customers as well as an incentive for participation by the retail store. This is a more streamlined approach to discounting and is more readily engaged by customers because no rebate forms are necessary and processing costs for those forms are non-existent. In addition, events are held monthly within some of the stores to educate consumers on energy efficiency products as well as providing a platform to more broadly educate on other programs within the Watt Choices offerings. As summarized in Table 4.1, fifteen retailers with 164 stores are participating in the program.

**Table 4-1: Participants in ECOS Upstream/Midstream Program**

<b>Retailer</b>	<b>Total Stores</b>	<b>Status</b>
ACE	2	Active
Costco	2	Active
CVS	29	Active
Do It Best	8	Active
Dollar Tree	16	Active
Family Dollar	37	Active
Goodwill Industries	7	Active
Independent Hardware Store	6	Active
Lowe's	7	Active
Sam's Club	3	Active
The Home Depot	9	Active
Techni-Art Online	1	Active
Wal-Mart	5	Active
True Value	3	Active
Giant Eagle	29	Active
<b>Total Active</b>	<b>164</b>	
Cardello	2	Non-Active
Kuhn's Quality Foods	7	Non-Active
True Value	10	Non-Active
<b>Total Non-Active</b>	<b>19</b>	
<b>Grand Total</b>	<b>183</b>	

**4.1.1 Program Logic**

Program Theories, Logic Models & Performance Indicators are provided in the EM&V Plan at Section 1.2.5. Program logic diagrams are provided in EM&V Plan Appendix E, Figure E-2 for the Residential Energy Efficiency Rebate Program.

**4.1.2 Program M&V Methodology**

The program's M&V approach is laid out in section 1.3 above. Program verification results will be provided in the Program Year 2010 final report, delivered in November, 2011.

Consistent with Duquesne Light's EM&V Plan Sections 2.5 and 2.5.1, the basic level of verification rigor will be used for TRM deemed savings measures and measures with rebates less than \$2,000 consisting of the six-step process identified in Section 1.3. REEP program specific variances from section 1.3 and program specific information are outlined below.

**Step 1 – Verification Checklist:** No variances from Section 1.3.

**Step 2 – Random Sampling:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 3 – Measure/Project Qualification:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 4 – Deemed Savings Verification:** No variances from Section 1.3.

**Step 5 – Participation and Installation Verification:** Telephone interviews of each sampled customer confirm participation in the program, receipt of a rebate or EE Kit, and installation of the energy saving measure(s). If the TRM includes deemed savings values and/or protocols incorporating in-service rates (ISR), verification surveys confirm program participation and participant purchase or otherwise receipt of subject energy efficiency products (i.e., in the case of EE kits provided participants at no cost). Telephone surveys are tailored to the product promotion and include questions designed to verify participants obtained and installed the EE products.

**Step 6 – Program Realization Rate:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

#### **4.1.3 Program Sampling**

Program sampling is described above in Section 1.3.1.1 Sampling Plan.

#### **4.1.4 Process Evaluation**

A process evaluation was not conducted for the PY 2010 Q4 report.

#### **4.1.5 Program Partners and Trade Allies**

Duquesne Light continued to work through local government partnerships with the City of Pittsburgh as well as Allegheny and Beaver Counties to coordinate delivery of its Act 129 program services.

Ecos is the implementation contractor for the upstream/midstream program and has enrolled 15 retailers with 164 store locations into the program.

#### **4.1.6 Program Finances**

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

**Table 4-2: Summary of Program Finances: TRC Test (REEP)<sup>28</sup>**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$163,053	1,016,580	1,037,162
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	163,053	1,016,580	1,037,162
B.1	Design & Development	0	88,224	540,966
B.2	Administration	0	0	0
B.3	Management	707,518	1,568,890	1,611,833
B.4	Marketing	36,401	93,683	132,255
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	743,919	1,750,797	2,285,054
C	<b>EDC Evaluation Costs</b>	33,891	66,422	116,822
D	<b>SWE Audit Costs</b>	0	89,855	142,748
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	940,863	2,923,654	3,581,786
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

<sup>28</sup> Definitions for terms in following table are subject to TRC Order.

## 4.2 Residential: School Energy Pledge Program

The School Energy Pledge (SEP) program is designed to teach students about energy efficiency, have them participate in a school fundraising drive, and help their families to implement energy-saving measures at home. Energy efficiency impacts take place in student homes when families adopt energy efficiency measures that students learn about at school. Through the SEP, families complete a pledge form wherein they commit to install energy efficiency measures provided in an SEP Energy Efficiency Tool Kit (SEP EE Kit) provided free of charge. In return for a family's commitment to install, the participating school receives an incentive of \$25.

### 4.2.1 Program Logic

Program Theories, Logic Models & Performance Indicators are provided in the EM&V Plan at Section 1.2.5. Program logic diagrams are provided in EM&V Plan Appendix E, Figure E-3 for the Residential School Energy Pledge Program.

### 4.2.2 Program M&V Methodology

The program's M&V approach is laid out above in section 1.3.1.1 Sampling Plan. Program verification results will be included in the Program Year 2010 final report, delivered in November, 2011.

Consistent with Duquesne Light's EM&V Plan Sections 2.5 and 2.5.1, the basic level of verification rigor will be used for TRM deemed savings measures and measures with rebates less than \$2,000 consisting of the six-step process identified in Section 1.3. SEP program specific variances from section 1.3 and program specific information are outlined below.

**Step 1 – Verification Checklist:** No variances from Section 1.3.

**Step 2 – Random Sampling:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 3 – Measure/Project Qualification:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 4 – Deemed Savings Verification:** No variances from Section 1.3.

**Step 5 – Participation and Installation Verification:** Telephone interviews of each sampled customer confirmed participation in the program, receipt of the SEP EE Kit, and installation of the energy saving measures. Telephone surveys are tailored to the product promotion and include questions designed to verify participants obtained the EE products.

**Step 6 – Program Realization Rate:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

### 4.2.3 Program Sampling

Program sampling is described above in Section 1.3.1.1 Sampling Plan.

### 4.2.4 Process Evaluation

A process evaluation was not conducted for the PY 2010 Q4 report.

### 4.2.5 Program Partners and Trade Allies

The School Energy Pledge Program was implemented as a partnership between Duquesne Light and regional elementary schools. Duquesne Light also partnered with participating student families that “pledged” to install energy efficient products in return for a \$25 donation to their child’s school.

### 4.2.6 Program Finances

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

**Table 4-3: Summary of Program Finances: TRC Test (SEP)<sup>29</sup>**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$0	\$45,000	\$163,750
A.2	EDC Incentives to Trade Allies	0	0	91,877
A	<b>Subtotal EDC Incentive Costs</b>	0	45,000	255,627
B.1	Design & Development	0	15,846	372,464
B.2	Administration	0	0	0
B.3	Management	182,324	514,619	530,920
B.4	Marketing	5,315	14,749	21,348
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	187,639	545,214	924,732
C	<b>EDC Evaluation Costs</b>	4,948	10,273	19,513
D	<b>SWE Audit Costs</b>	0	14,729	24,330
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	192,587	615,216	1,224,202
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

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

### **4.3 Residential: Appliance Recycling Program**

The Residential Appliance Recycling Program (RARP) seeks to produce cost-effective, long-term, coincident peak demand reduction and annual energy savings in residential market sector by removing operable, inefficient, primary and secondary refrigerators and freezers from the power grid in an environmentally safe manner.

To stimulate participation, RARP offers incentives for eligible refrigerators (\$35) and freezers (\$35). In addition, the program collaborates with other utility programs such Low Income Energy Efficiency Program, the Public Agency Partnership Program and is implemented in a manner consistent with appliance recycling programs across Pennsylvania by using a common implementation contractor (JACO).

#### **4.3.1 Program Logic**

Program Theories, Logic Models & Performance Indicators are provided in the EM&V Plan at Section 1.2.5. Program logic diagrams are provided in EM&V Plan Appendix E.

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

The program's M&V approach is laid out above in section 1.3.1.1 Sampling Plan. Program verification results will be included in the Program Year 2010 final report, delivered in November, 2011.

Consistent with Duquesne Light's EM&V Plan Sections 2.5 and 2.5.1, the basic level of verification rigor used for TRM deemed savings measures and measures with rebates less than \$2,000 consists of a six-step process identified in Section 1.3. RARP program specific variances from Section 1.3 and program specific information are outlined below.

**Step 1 – Verification Checklist:** No variances from Section 1.3.

**Step 2 – Random Sampling:** In EM&V Plan Table 2-10, the annual sample size for the RARP Program is 55, with a targeted level of confidence and precision of 9.9%.

**Step 3 – Measure/Project Qualification:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 4 - Deemed Savings Verification:** All energy efficiency measures delivered by the RARP have deemed savings specified in the current TRM. The fifth check list criterion described under Step 1 in Section 1.3 is addressed through comparison of PMRS tracking system unit kWh and kW with TRM or interim TRM update deemed savings values.

**Step 5 – Participation and Installation Verification:** Telephone surveys are employed for impact verification of measures receiving basic level of rigor verification (i.e., deemed savings measures with rebates less than \$2000). RARP telephone interview surveys will be performed for of each sampled customer to confirm participation in the program. Participation verification includes confirmation the unit was picked up for recycling and the unit was tested to ensure it is in operating condition prior to removal

**Step 6 – Program Verification Rate:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.



#### **4.3.3 Program Sampling**

Program sampling is described above in Section 1.3.1.1 Sampling Plan.

#### **4.3.4 Process Evaluation**

A process evaluation was not conducted for the PY 2010 Q4 report.

#### **4.3.5 Program Partners and Trade Allies**

The program implementer (JACO) is implementing similar programs for the other Pennsylvania EDCs, promoting consistent regional treatment, increasing efficiencies and reducing customer confusion.

### 4.3.6 Program Finances

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

**Table 4-5: Summary of Program Finances: TRC Test (RARP) <sup>30</sup>**

	Category	IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	\$25,935	\$130,515	\$139,685
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	25,935	130,515	139,685
B.1	Design & Development	0	11,636	97,413
B.2	Administration	0	0	0
B.3	Management	43,530	382,589	398,890
B.4	Marketing	5,014	12,718	18,220
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	48,544	406,943	514,523
C	<b>EDC Evaluation Costs</b>	4,668	9,048	15,768
D	<b>SWE Audit Costs</b>	0	12,096	19,055
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	79,147	558,602	689,031
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

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

## 4.4 Residential: Low Income Energy Efficiency Program

The Low-Income Energy Efficiency Program (LIEEP) is designed as an income-qualified program providing services to assist low-income households to conserve energy and reduce electricity costs. The objective of this program is to increase qualifying customers' comfort while reducing their energy consumption, costs, and economic burden.

In PY 2010 the LIEEP savings by income qualifying customers were delivered by the Residential Energy Efficiency Program (REEP) and the Residential Appliance Recycling Program (RARP).

Commencing in Q4, a portion of the Upstream Lighting program is allocated to the Low Income sector based on the portion of DLC's households that are low-income. The Q4 result for the low income sector includes 27.3% of the entire Upstream Lighting program to date savings.

### 4.4.1 Program Logic

Program Theories, Logic Models & Performance Indicators are provided in the EM&V Plan at Section 1.2.5. Program logic diagrams are provided in EM&V Plan Appendix E, Figure E-1 for the Residential Low Income Program.

### 4.4.2 Program M&V Methodology

The program's M&V approach is laid out above in section 1.3.1.1 Sampling Plan. Program verification results will be included in the Program Year 2010 final report, delivered in November, 2011.

Consistent with Duquesne Light's EM&V Plan Sections 2.5 and 2.5.1, the basic level of verification rigor will be used for TRM deemed savings measures and measures with rebates less than \$2,000 consisting of the six-step process identified in Section 1.3. LIEEP Program specific variances from Section 1.3 and program specific information are outlined below.

**Step 1 – Verification Checklist:** No variances from Section 1.3.

**Step 2 – Random Sampling:** In EM&V Plan Table 2-10, the annual sample size for the LIEEP Program is 55, with a targeted level of confidence and precision of 10.0%.

**Step 3 – Measure/Project Qualification:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 4 - Deemed Savings Verification:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 5 – Participation and Installation Verification:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

**Step 6 – Program Verification Rate:** This section will be included in the Program Year 2010 final report, delivered in November, 2011.

#### 4.4.3 Program Sampling

Program sampling is described above in Section 1.3.1.1 Sampling Plan.

#### 4.4.4 Process Evaluation

A process evaluation was not conducted for the PY 2010 Q4 report.

#### 4.4.5 Program Partners and Trade Allies

Consistent with its filed program plan, LIEEP will be delivered through Public Agency Partnership arrangements whereby Duquesne Light partners with local government (cities and counties and their jurisdictional agencies) to deliver program services. This program design leverages program resources and enables it to reach a greater number of participants while retaining its status as a cost-effective resource program.

#### 4.4.6 Program Finances

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

**Table 4-6: Summary of Program Finances (LIEEP Program)**

	Category	IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	\$326,466	\$439,493	\$467,408
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	326,466	439,493	467,408
B.1	Design & Development	0	30,420	152,764
B.2	Administration	0	0	0
B.3	Management	81,379	223,048	239,349
B.4	Marketing	12,857	32,820	44,805
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	94,236	286,288	436,918
C	<b>EDC Evaluation Costs</b>	11,970	23,317	40,957
D	<b>SWE Audit Costs</b>	0	31,334	49,546
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	432,672	780,432	994,829
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

## **4.5 Commercial Sector Programs**

### **4.5.1 Commercial Overview**

The Commercial Sector includes an overall umbrella program structure and four specialized programs that address the following market segments: Small Office, Large Office, Public Agency, Retail, and Healthcare. Under the overarching umbrella program, the specialized programs promote specific technologies or target specific market segments while incorporating the umbrella program savings impacts and incentive levels.

The commercial programs are designed to help commercial customers assess the potential for energy-efficiency project implementation, cost and energy savings, and, for appropriate customers, provide follow-through by installing measures and verifying savings. The following program services are provided in each sub-program:

- Auditing of building energy use
- Provision of targeted financing and incentives
- Project management and installation of retrofit measures
- Training, and technical assistance

The following organizations are responsible for implementing the commercial sector programs:

- Large Office: Roth Bros, Inc. and Enerlogics Networks, Inc.
- Small Office: AllFacilities Energy Group
- Retail: AllFacilities Energy Group
- Healthcare: Duquesne Light
- Governmental and Non-Profit Programs: Duquesne Light and Governmental Partners including: Allegheny County, Allegheny County Economic Development, Allegheny County Housing Authority, City of Pittsburgh and Beaver County Housing Authority

### **4.5.2 Program Logic**

Program Theories, Logic Models & Performance Indicators are provided in the EM&V Plan at Section 1.2.5. Program logic diagrams are provided in EM&V Plan Appendix E.

### **4.5.3 Program EM&V Methodology**

The program's M&V approach is laid out above in section 1.3.1.1 Sampling Plan. Program verification results will be included in the Program Year 2010 final report, delivered in November, 2011.

### **4.5.4 Commercial Sector Evaluation Group Impact Evaluation**

Per the utility's EM&V Plan, for the purpose of conducting cost-effective EM&V, certain industrial and commercial programs were grouped based on shared characteristics. Commercial sector retail, healthcare, large and small office and public agency partnership programs were similar enough in structure to be treated as one evaluation group. For PY2-Q4, the Commercial Sector Evaluation Group program activity subject to EM&V is summarized by program in Section 1.3.1.1

### **4.5.5 Process Evaluation**

A process evaluation was not conducted for the PY 2010 Q4 report.

#### 4.5.6 Program Partners and Trade Allies

In addition to the implementation contractors noted above, Duquesne Light continues to work through local government partnerships with the City of Pittsburgh, Allegheny and Beaver Counties as well as major universities and healthcare providers to coordinate delivery of its Act 129 program services.

#### 4.5.7 Program Finances

A summary of the project finances are presented in Tables 4-7 through 4-12.

**Table 4-7: Summary of Program Finances: TRC Test (Commercial Umbrella, Small and Large)<sup>31</sup>**

	Category	IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	\$194,853	\$240,327	\$240,327
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	194,853	240,327	240,327
B.1	Design & Development	0	12,749	90,956
B.2	Administration	0	0	0
B.3	Management	55,963	110,455	116,762
B.4	Marketing	5,481	14,502	19,649
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	61,444	137,706	227,367
C	<b>EDC Evaluation Costs</b>	5,103	9,896	9,896
D	<b>SWE Audit Costs</b>	0	13,239	20,864
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	261,400	401,168	498,454
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

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

**Table 4-8: Summary of Program Finances: TRC Test (Office- Small)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$30,352	\$66,378	\$66,378
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	30,352	66,378	66,378
B.1	Design & Development	0	25,185	180,345
B.2	Administration	0	0	0
B.3	Management	80,765	185,102	194,922
B.4	Marketing	10,055	26,467	36,680
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	90,820	236,754	411,947
C	<b>EDC Evaluation Costs</b>	9,362	18,507	18,507
D	<b>SWE Audit Costs</b>	0	25,263	40,390
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	130,534	346,902	537,222
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

**Table 4-9: Summary of Program Finances: TRC Test (Office - Large)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$260,975	\$628,110	\$628,110
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	260,975	628,110	628,110
B.1	Design & Development	0	48,018	342,546
B.2	Administration	0	0	0
B.3	Management	180,157	407,943	417,763
B.4	Marketing	20,700	52,791	72,177
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	200,857	508,752	832,486
C	<b>EDC Evaluation Costs</b>	19,272	37,353	37,353
D	<b>SWE Audit Costs</b>	0	49,930	78,645
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	481,104	1,224,145	1,576,594
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.



**Table 4-10: Summary of Program Finances: TRC Test (Retail)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$95,171	\$191,479	\$191,479
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	95,171	191,479	191,479
B.1	Design & Development	0	29,444	210,296
B.2	Administration	0	0	0
B.3	Management	327,400	471,565	491,205
B.4	Marketing	12,404	32,290	44,194
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	339,804	533,299	745,695
C	<b>EDC Evaluation Costs</b>	11,549	22,515	22,515
D	<b>SWE Audit Costs</b>	0	30,284	47,916
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	446,524	777,577	1,007,605
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

**Table 4-11: Summary of Program Finances: TRC Test (Government/Non-Profit)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$1,114,140	\$1,458,621	\$1,458,621
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	1,114,140	1,458,621	1,458,621
B.1	Design & Development	0	81,100	579,197
B.2	Administration	0	0	0
B.3	Management	106,476	225,216	234,676
B.4	Marketing	34,189	88,239	121,023
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	140,665	394,555	934,896
C	<b>EDC Evaluation Costs</b>	31,832	62,044	62,044
D	<b>SWE Audit Costs</b>	0	83,439	132,000
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	1,286,637	1,998,659	2,587,561
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

**Table 4-12: Summary of Program Finances: TRC Test (Healthcare)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$24,458	\$33,473	\$33,473
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	24,458	33,473	33,473
B.1	Design & Development	0	27,065	93,248
B.2	Administration	0	0	0
B.3	Management	31,038	72,415	164,338
B.4	Marketing	11,454	29,522	40,460
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	42,492	129,002	298,046
C	<b>EDC Evaluation Costs</b>	10,664	20,766	20,766
D	<b>SWE Audit Costs</b>	0	27,897	44,099
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	77,614	211,138	396,384
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

## **4.6 Industrial Sector Programs**

### **4.6.1 Industrial Sector Overview**

The Industrial Sector includes an overall umbrella program structure and three specialized programs that address the following market segments: primary metals, chemical products and mixed industrials. Under the overarching umbrella program, specialized programs are designed to promote specific technologies or target specific market segments while incorporating the umbrella program savings impacts and incentive levels. In this manner, all industrial programs present a consistent and common offering.

The industrial programs are intended to provide a comprehensive approach to energy savings and permanent demand reduction, and address a full range of efficiency opportunities from low cost improvements to entire system upgrades -- with Duquesne Light customers within the energy intensive primary metals, chemical products and mixed industrials market segments. Each program provides the following services:

- Targeted and comprehensive on-site walk-through assessments and professional grade audits to identify energy savings opportunities.
- Efficiency studies/reports that detail process and equipment upgrades that present the greatest potential for energy/cost savings.
- Support to access rebates and incentives available across electric measures designed to help defray upfront costs of installing the equipment.
- Coordination with local chapters of key industry associations to promote energy efficiency improvements through trusted sources and encourage market-transforming practices among equipment vendors and purchasers

Duquesne Light has chosen the following Conservation Service Providers (CSPs) to implement industrial sector programs:

- Primary Metals Program: Roth Bros, Inc. and Enerlogics Networks, Inc.
- Chemical Products: Global Energy Partners, LLC
- Mixed Industrial: Global Energy Partners, LLC

### **4.6.2 Program Logic**

Program Theories, Logic Models & Performance Indicators are provided in the EM&V Plan at Section 1.2.5. Program logic diagrams are provided in EM&V Plan Appendix E.

### **4.6.3 Program EM&V Methodology**

The program's M&V approach is laid out above in section 1.3.1.1 Sampling Plan. Program verification results will be included in the Program Year 2010 final report, delivered in November, 2011.

### **4.6.4 Industrial Sector Evaluation Group Impact Evaluation**

As related in the previous section, per the utility's EM&V Plan, for the purpose of conducting cost-effective EM&V, certain industrial and commercial programs are grouped based on shared characteristics. Industrial sector umbrella, primary metals, chemical products and mixed industrial product energy efficiency programs are similar enough in structure to be treated as one evaluation group.

#### 4.6.5 Process Evaluation

A process evaluation was not conducted for the PY 2010 Q4 report.

#### 4.6.6 Program Partners and Trade Allies

Duquesne Light continues to work through local government partnerships with the City of Pittsburgh, Allegheny and Beaver Counties as well as major universities and healthcare providers to coordinate delivery of its Act 129 program services.

#### 4.6.7 Program Finances

A summary of the project finances is presented in Tables 4-13 to 4-16.

**Table 4-13: Summary of Program Finances: TRC Test (Industrial Umbrella, Small and Large)**

	Category	IQ	PYTD	CPITD
A.1	EDC Incentives to Participants	\$19,193	\$20,272	\$45,162
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	19,193	20,272	45,162
B.1	Design & Development	0	9,133	38,548
B.2	Administration	0	0	0
B.3	Management	11,607	33,300	39,607
B.4	Marketing	3,200	9,193	12,767
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	14,807	51,626	90,922
C	<b>EDC Evaluation Costs</b>	2,979	6,038	6,038
D	<b>SWE Audit Costs</b>	0	8,452	13,746
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	36,979	86,388	155,868
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

**Table 4-14: Summary of Program Finances: TRC Test (Mixed Industrials)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$77,719	\$165,989	\$165,989
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	77,719	165,989	165,989
B.1	Design & Development	0	19,351	39,333
B.2	Administration	0	0	0
B.3	Management	110,486	228,993	304,611
B.4	Marketing	6,821	18,868	26,765
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	117,307	267,212	370,709
C	<b>EDC Evaluation Costs</b>	6,351	12,993	12,993
D	<b>SWE Audit Costs</b>	0	18,368	30,066
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	201,377	464,562	579,757
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

**Table 4-15: Summary of Program Finances: TRC Test (Chemical Products)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$539,401	\$540,231	\$540,231
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	539,401	540,231	540,231
B.1	Design & Development	0	18,237	130,281
B.2	Administration	0	0	0
B.3	Management	735,863	851,282	862,861
B.4	Marketing	7,645	19,735	27,110
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	743,508	889,254	1,020,252
C	<b>EDC Evaluation Costs</b>	7,117	13,892	13,892
D	<b>SWE Audit Costs</b>	0	18,712	29,636
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	1,290,026	1,462,089	1,604,011
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.

**Table 4-16: Summary of Program Finances: TRC Test (Primary Metals)**

	<b>Category</b>	<b>IQ</b>	<b>PYTD</b>	<b>CPITD</b>
A.1	EDC Incentives to Participants	\$483,248	\$600,576	\$600,576
A.2	EDC Incentives to Trade Allies	0	0	0
A	<b>Subtotal EDC Incentive Costs</b>	483,248	600,576	600,576
B.1	Design & Development	0	59,641	429,684
B.2	Administration	0	0	0
B.3	Management	497,155	923,561	955,252
B.4	Marketing	20,740	57,059	81,415
B.5	Technical Assistance	0	0	0
B	<b>Subtotal EDC Implementation Costs</b>	517,895	1,040,261	1,466,351
C	<b>EDC Evaluation Costs</b>	19,310	39,665	39,665
D	<b>SWE Audit Costs</b>	0	56,285	92,362
E	<b>Participant Costs</b>	0	0	0
	<b>Total Costs</b>	1,020,453	1,736,787	2,198,954
F	<b>Annualized Avoided Supply Costs*</b>	0	0	0
G	<b>Lifetime Avoided Supply Costs*</b>	0	0	0
	<b>Total Lifetime Economic Benefits*</b>	0	0	0
	<b>Portfolio Benefit-to-Cost Ratio*</b>			

\*Per Secretarial letter dated May 25, 2011, TRC costs will be reported in the final report to be submitted November 15, 2011.