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April 15, 2013

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APR 15 2013

**Via Federal Express**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Second Floor  
Harrisburg, Pennsylvania 17120

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

**Re: PUC Docket No. M-2008-2069887**  
**Energy Efficiency and Conservation Program Quarterly Report for**  
**December 1, 2012 through February 28, 2013**

Dear Secretary Chiavetta:

In accordance with the Commission's Secretarial Letter dated May 25, 2011, enclosed is PECO's Quarterly Energy Efficiency & Conservation Report for the period December 1, 2012 through February 28, 2013.

PECO is providing a copy of the report to the Act 129 Statewide Evaluator (GDS Associates, Inc.) and is also posting the report on the PECO website.

Please acknowledge receipt of the foregoing on the enclosed copy of this letter.

If you have any further questions regarding this matter, please call me at 215-841-5777.

Sincerely,



cc: C. Walker-Davis, Director, Office of Special Assistants  
P. Diskin, Director, Bureau of Technical Utility Services  
M. C. Lesney, Director, Bureau of Audits  
J. E. Simms, Director, Bureau of Investigation & Enforcement  
Office of Consumer Advocate  
Office of Small Business Advocate  
McNees, Wallace & Nurick

enclosures

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

**For the Period  
December 2012 through February 2013  
Program Year 4, Quarter 3**

**For Pennsylvania Act 129 of 2008  
Energy Efficiency and Conservation Plan**

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**PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU**

Prepared by Navigant Consulting, Inc.

For

PECO Energy Company

April 15, 2013

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**PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU**

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## Acronyms

C&I	Commercial and Industrial
CATI	Computer-Aided Telephone Interview
CFL	Compact Fluorescent Lamp
CPITD	Cumulative Program/Portfolio Inception to Date
CPITD-Q	Cumulative Program/Portfolio Inception through Current Quarter
CVR	Conservation Voltage Reduction
CVRf	Conservation Voltage Reduction factor
DCU	Digital Control Units
DLC	Direct Load Control
DRA	Demand Response Aggregator
DRMS	Demand Response Management System
EDC	Electric Distribution Company
EE&C	Energy Efficiency and Conservation
EM&V	Evaluation, Measurement, and Verification
EISA	Energy Independence and Security Act of 2007
GNI	Government, Nonprofit, and Institutional
HVAC	Heating, Ventilating, and Air Conditioning
IQ	Incremental Quarter
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-Emitting Diode
LEEP	Low-Income Energy Efficiency Program
LIURP	Low-Income Usage Reduction Program
M&V	Measurement and Verification
MW	Megawatt
MWh	Megawatt-hour
NTG	Net-to-Gross
PUC	Public Utility Commission
PY1	Program Year 2009
PY2	Program Year 2010
PY3	Program Year 2011
PY4	Program Year 2012
PY4TD	Program/Portfolio Year Four to Date
SCI	Smart Construction Incentives
SEER	Seasonal Energy Efficiency Rating
SEI	Smart Equipment Incentives

SLD	Smart Lighting Discounts
SSMVP	Site-Specific Measurement and Verification Plan
SWE	Statewide Evaluator
TRC	<i>Total Resource Cost</i>
TRM	Technical Reference Manual

## 1 Overview of Portfolio

Pennsylvania Act 129 of 2008, signed on October 15, 2008, mandated energy savings and demand reduction goals for the largest electric distribution companies (EDCs) in Pennsylvania. Each EDC submitted energy efficiency and conservation (EE&C) plans—which were approved by the Pennsylvania Public Utility Commission (PUC)—pursuant to these goals. This report documents the progress and effectiveness of the EE&C accomplishments for PECO in the third quarter (Q3) of Program Year Four (PY4), defined as December 1, 2012, through February 28, 2013, as well as the cumulative accomplishments of the programs since inception.

Navigant Consulting, Inc. (Navigant) is evaluating the programs, which includes measurement and verification (M&V) of the savings. The verified savings for PY4 will be reported in the annual report, to be filed November 15, 2013.

### 1.1 Summary of Achievements

PECO has achieved 115 percent of the energy savings compliance target for May 31, 2013, based on cumulative program inception to date (CPITD) reported gross energy savings,<sup>1</sup> and 113 percent of the energy savings compliance target, based on CPITD-Q<sup>2</sup> gross energy savings through PY4 Q3, as shown in Figure 1-1.

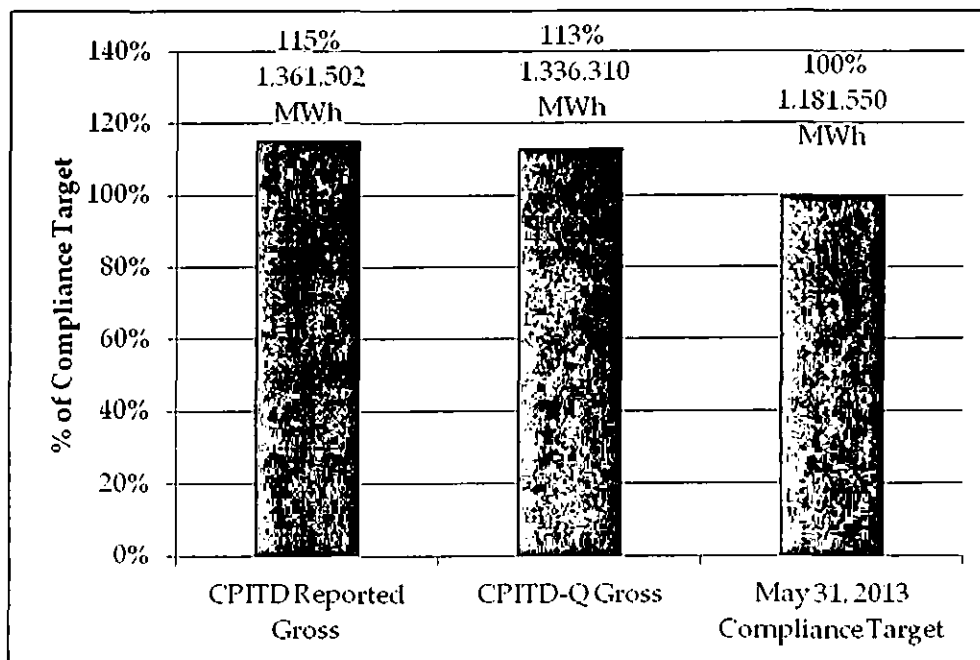
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<sup>1</sup> CPITD Reported Gross Savings = CPITD Reported Gross Savings through PY3 + PYTD Reported Gross Savings. All savings reported as CPITD reported gross savings are computed this way.

<sup>2</sup> CPITD-Q Gross Savings = CPITD Verified Gross Savings through PY3 + PYTD Reported Gross Savings. All savings reported as CPITD-Q gross savings are computed this way. CPITD-Q savings provide the best available estimate of savings achieved through the current quarter. CPITD Verified Gross Savings were reported in the PY3 annual report.

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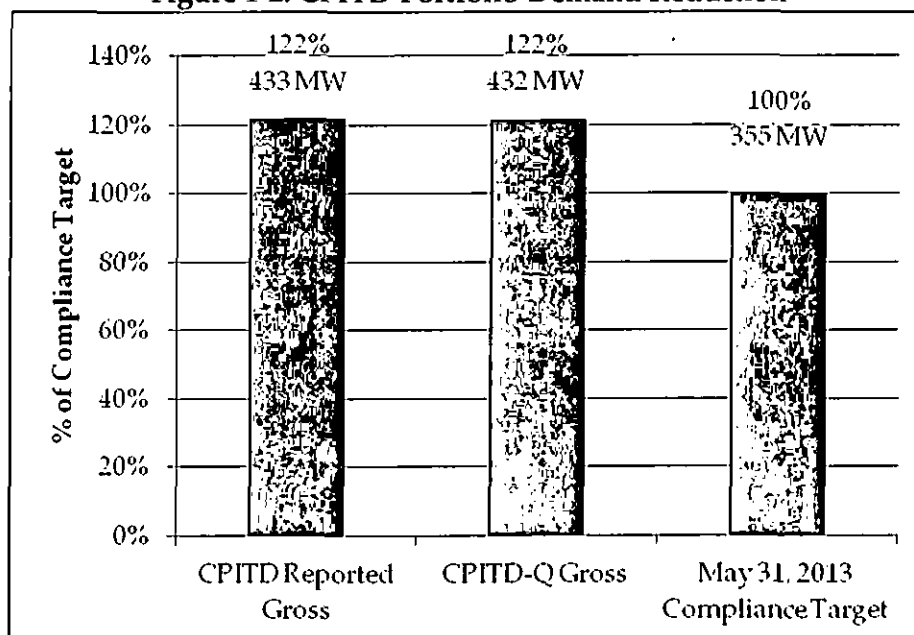
**Figure 1-1. Cumulative Portfolio Inception to Date Energy Impacts**





PECO has achieved 122 percent of the May 31, 2013, demand reduction compliance target, based on CPITD reported gross demand reduction, and 122 percent of the demand reduction compliance target based on CPITD-Q reported gross demand reduction as shown in Figure 1-2. This reduction is a result of the demand impact from the energy efficiency, demand response and conservation voltage reduction (CVR) programs.

**Figure 1-2. CPITD Portfolio Demand Reduction**



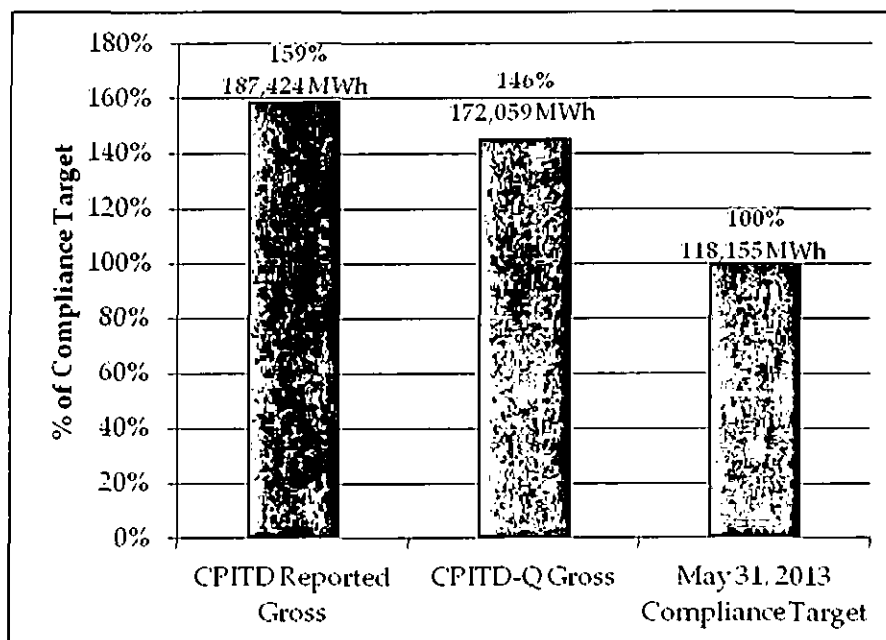
There are 17 measure groups targeted to the low-income sector, and another 27 measure groups offered by other programs in the residential sector (which are also available to low-income customers). These 44 measure groups offered to the low-income sector therefore comprise 35 percent of the total of 124 measure groups offered across PECO's portfolio. As required by Act 129, this exceeds the fraction of electric consumption of the utility's low-income households divided by the total electricity consumption in the PECO service area (3.1 percent).<sup>3</sup> The CPITD

<sup>3</sup> Act 129 includes a provision requiring electric distribution companies to offer a number of energy efficiency measures to low-income households that are "proportionate to those households' share of the total energy usage in the service territory." 66 Pa.C.S. §2806.1(b)(i)(G). The legislation contains no provisions regarding targets for participation, or energy or demand savings.

reported gross energy savings achieved in the low-income sector is 103,283 megawatt-hours (MWh);<sup>4</sup> this is 8.3 percent of the CPITD total portfolio reported gross energy savings.

PECO achieved 159 percent of the May 31, 2013, energy reduction compliance target for the government, nonprofit, and institutional (GNI) and sectors, based on CPITD reported gross energy savings, and 146 percent of the target based on CPITD-Q gross energy savings achieved through PY4 Q3, as shown in Figure 1-3. Note that the CPITD and CPITD-Q values shown in the figure include 38,445 MWh allocated to the GNI sectors from the CVR program.

**Figure 1-3. Government, Nonprofit, and Institutional Sectors**



## 1.2 Program Updates and Findings

The following are updates and findings from each program:

- **Low-Income Energy Efficiency Program:** There were no significant changes to LEEP in PY4 Q3. Program participation remains steady and the majority of participants continue to receive basic measures and compact fluorescent lamp (CFL) light bulbs.
- **Smart Lighting Discounts:** While the program continues to reflect the large reduction in program size that took place during the end of PY2 and throughout PY3, the average monthly sales for the third quarter of PY4 were 25,000 bulbs, compared with 23,000 per

<sup>4</sup> This includes 25,630 MWh allocated to the Low Income sector from the CVR program.

month in PY4 Q2, 17,800 per month in PY4 Q1 and an average of 13,100 per month across the last 9 months of PY3. As such, there has been a modest but steady increase in monthly program bulb sales since the middle of PY3. Consistent with the change in program strategy from PY2 to PY3, the focus remains exclusively on specialty CFLs.

- **Smart Appliance Recycling Program:** There were no significant changes made to the program in PY4 Q3. Participation remains low for PY4 Q3, a trend that started in PY3 Q3 following the significant reduction in the program incentive. There were approximately 511 participants this quarter, which is consistently down from previous quarters (where participation was between 700 – 1,000 new participants). Overall, participation levels since the incentive was reduced are less than one-third of the level seen prior to this. This is a strong indication of just how sensitive customers in this market are to the program incentive level.
- **Smart Home Rebates:** PECO made no significant programmatic changes in the three quarters of PY4. This program continues to offer ENERGY STAR® Most Efficient, models with the greatest efficiency within each product category. The program also continues to focus on heating, ventilating, and air conditioning (HVAC) equipment. For this quarter, the preponderance of (non-lighting) installed measures was air source heat pumps and central air conditioning units. Air source heat pumps constituted 30 percent of overall participation, 35 percent of energy savings, and 45 percent of demand savings. Central air conditioning accounted for 39 percent of participation, 49 percent of energy savings, and 15 percent of demand savings.
- **Smart Equipment Incentives Commercial and Industrial Program:** A total of 25 retrofit projects received rebates from the SEI C&I program in PY4 Q3. This value is lower than previous quarters due to the fact that the program has been placing all new applications on a wait list since October 1, 2011. Therefore, the applications that completed in this quarter were accepted prior to October 1, 2011, and the total pool of projects is reducing over time as projects complete. PECO staff has discussed reconsidering the waitlisted applications. The evaluation team and PECO staff are currently in discussions about the impact this would have on sample design, timeframe and budget in the upcoming quarters.
- **Smart Equipment Incentives Government, Nonprofit, and Institutional Program:** A total of 34 projects received rebates from the SEI GNI program in PY4 Q3. This value is lower than previous quarters due to the fact that the program has been placing all new applications on a wait list since October 1, 2011. The applications that are being completed in this quarter were accepted prior to the inception of the waitlist, and that total pool of projects is reducing over time as projects are completed. PECO staff has

discussed reconsidering the waitlisted applications going forward. The evaluation team and PECO staff are currently in discussions about the impact this would have on sample design, timeframe and budget in the upcoming quarters.

- **Smart Construction Incentives Program:** The SCI program paid a total of nine projects in PY4 Q3. Of these nine, one project was in the C&I sector and eight were in the GNI sector. This brings the total participation this year to 31 projects. Two of the GNI projects in Q3 used the whole building track, and all design incentives have been tracked. To date, the program has claimed a larger number of in the GNI sector (24) than in the C&I sector (seven). Overall participation to date is lower than in PY3, when the program reported a total of 54 projects by the end of Q3. This is due to the placement of all new applications on a wait list since October 1, 2011. PECO staff has discussed reconsidering the waitlisted applications going forward. The evaluation team and PECO staff are currently in discussions about the impact this would have on sample design, timeframe and budget in the upcoming quarters. The program has claimed a total of seven whole building projects so far in this program year. In PY3, the program paid on a total of ten whole building projects over the course of the year.
- **Residential Smart AC Saver Program:** PECO has completed the installation of digital control units (DCUs) and had 78,073 active participants representing 90,630 active devices at the end of PY4 Q3. The Residential Smart AC Saver Program is complete for PY4. PECO called curtailment events totaling 51.5 hours during PY4 and Navigant has verified savings of 51.3 MW for the program.
- **Commercial Smart AC Saver Program:** PECO has completed installing the new programmable thermostats, which now total 2,206 active participants representing 3,851 active devices at the end of PY4 Q3. The Commercial Smart AC Saver Program is complete for PY4. PECO called curtailment events totaling 51.5 hours during PY4 and Navigant has verified savings of 1.6 MW for the program.
- **Permanent Load Reduction:** There was no activity in the PLR program during the third quarter.
- **Demand Response Aggregator:** The Demand Response Aggregator program was dispatched only in PY4 Q1 to assist in PECO's achievement of its PY4 demand reduction compliance target. The program was discontinued at the end of PY4 Q1.
- **Distributed Energy Resources:** Similar to the Demand Response Aggregator program, the Demand Energy Response program was dispatched only in PY4 Q1 to assist in

PECO's achievement of its PY4 demand reduction compliance target. The program was discontinued at the end of PY4 Q1.

### 1.3 Evaluation Updates and Findings

Each program's evaluation updates and findings are as follows:

- **Low-Income Energy Efficiency Program:** PY4 savings for Component 1 of LEEP will be determined using a four-year average of billing analysis results from the 2008–2009 Low-Income Usage Reduction Program (LIURP) and PY1 and PY2 LEEP data. Impacts for Components 2 and 3 will be verified via a review of the tracking system database. Impacts for Components 4 and 5 will be verified via participant self-reports, in conjunction with the telephone survey. Process evaluation activities will include in-depth interviews with utility and implementation contractor staff and telephone surveys of participants. These activities will commence in PY4 Q4.
- **Smart Lighting Discounts:** The M&V completed for PY4Q3 report consisted of reviewing the tracking data provided to the evaluation team by PECO program staff, as well as reviewing all of the manufacturer invoices received and approved by PECO and Ecova through the end of February 2013. After consistency was verified between the manufacturer invoices and the program tracking data, the tracking data were used to verify the reported PY4Q3, PYTD, and CPITD savings.
- **Smart Appliance Recycling:** The M&V completed for this quarterly report consisted of reviewing the 3rd quarter tracking data provided to the evaluation team by PECO program staff. The PY4 PYTD savings in this report were estimated by applying the TRM specified savings algorithm to this quarterly and program year-to-date tracking data provided by PECO, and verified by the evaluation team.
- **Smart Home Rebates:** In PY4 Q3, the evaluation team conducted a desk review of Q1 and Q2 tracking data and calculated a preliminary realization rate of 99.8 percent for both energy and demand. Staff and implementation contractor interviews will begin in PY4 Q4 as will mystery shopping activities with retail trade allies. The telephone survey of participants will begin after the close of PY4.
- **Smart Equipment Incentives Commercial and Industrial Program:** The evaluation of the SEI C&I program will align closely with the PY3 evaluation in terms of approaches and tasks. The team completed an initial sample design based on Q1 and Q2 completed project files as well as available pipeline project information. The sample was designed to achieve an 85/15 or better level of confidence and relative precision at the program

level. A total of 16 projects are being evaluated. The team requested Q1 and Q2 project files from PECO/KEMA and is in the process of reviewing the files and drafting site-specific M&V plans. The team will also review the sample design with Q3 and Q4 data, updated pipeline project information and updated waitlist status information. The team is planning to begin field verification in March 2013. The team has conducted 5 in depth interviews with PECO / KEMA personnel to assess the effectiveness of the program and to identify any barriers or potential improvements to the program implementation. The participant interview guides are currently being designed and these surveys are expected to be fielded in the coming months.

- **Smart Equipment Incentives Government, Nonprofit, and Institutional:** Consistent with the evaluation of the SEI C&I program, the site level EM&V sample was designed to achieve an 85/15 or better level of confidence and relative precision at the program level. The team requested Q1 and Q2 project files from PECO/KEMA and the EM&V activity for sampled projects is currently underway. A total of 20 projects, including 4 municipal lighting upgrade projects, are being evaluated. The team plans to re-visit the sample design and strata for evaluation of projects in Q3 and Q4, based on updated waitlist and pipeline project information. The team has conducted 5 in depth interviews with PECO / KEMA personnel to assess the effectiveness of the program and to identify any barriers or potential improvements to the program implementation. The participant interview guides are currently being designed and these surveys are expected to be fielded in the coming months.
- **Smart Construction Incentives:** Navigant conducted in-depth interviews with program staff during Q3 and provided some initial feedback to the program. The process evaluation will also include participant surveys and trade ally interviews, which will begin during Q4. The impact evaluation will include file reviews and on-site verification of a sample of projects. Navigant may use billing data to calibrate modeled savings from whole building projects in the sample. Navigant will draw an initial sample in the next few weeks and draw additional projects as needed from Q4. The sample size and design will be based on the number and types of completed projects at the end of Q3 and the remaining pipeline projects for Q4.
- **Residential Smart AC Saver Program:** Navigant utilized the “Deemed Savings Estimates for Legacy Air Conditioning and Water Heating Direct Load Control Programs in PJM Region” report in conjunction with the PECO tracking database of residential customers to predict reduction by connected air conditioning load.

PECO has identified its top 100 load hours for PY4. Utilizing the predicted reduction by connected air conditioning load values Navigant calculated residential load reductions in PY4 to be 51.3 MW.

A final survey of participants will be conducted to understand customer demographics, how customers learned of the program, satisfaction with the program, how the customers handled their AC on a typical summer day and during heat waves, if they noticed load control events, and how they and their homes responded to these events.

- **Commercial Smart AC Saver Program:** Navigant has utilized the data from the M&V group (a sample of participants that had additional metering equipment installed on their air conditioners) to calculate load reduction for the commercial direct load control population.

PECO has identified its top 100 load hours for PY4. Utilizing the calculated load reduction for the commercial direct load control population, Navigant calculated commercial load reductions in PY4 to be 1.6 MW.

A final survey of participants will be conducted to understand customer demographics, how customers learned of the program, satisfaction with the program, how the customers handled their AC on a typical summer day and during heat waves, if they noticed load control events, and how they and their businesses responded to these events.

- **Permanent Load Reduction:** Only one project has been completed in the PLR program. Project files have been requested for this project.
- **Demand Response Aggregator:** Navigant evaluated the demand savings for each participant in this program over PECO's top 100 hours during the summer of 2012. The results were reported in PECO's Preliminary Demand Reduction Compliance report, which was submitted to the PUC on March 1, 2013.
- **Distributed Energy Resources:** Similar to the Demand Response Aggregator program, Navigant evaluated the demand savings for each participant in this program over PECO's top 100 hours during the summer of 2012. The results were reported in PECO's Preliminary Demand Reduction Compliance report, which was submitted to the PUC on March 1, 2013.

## **2 Summary of Energy Impacts by Program**

A summary of the reported energy savings by program is presented in Figure 2-1.



Figure 2-1. CPITD Reported Gross Energy Savings by Program

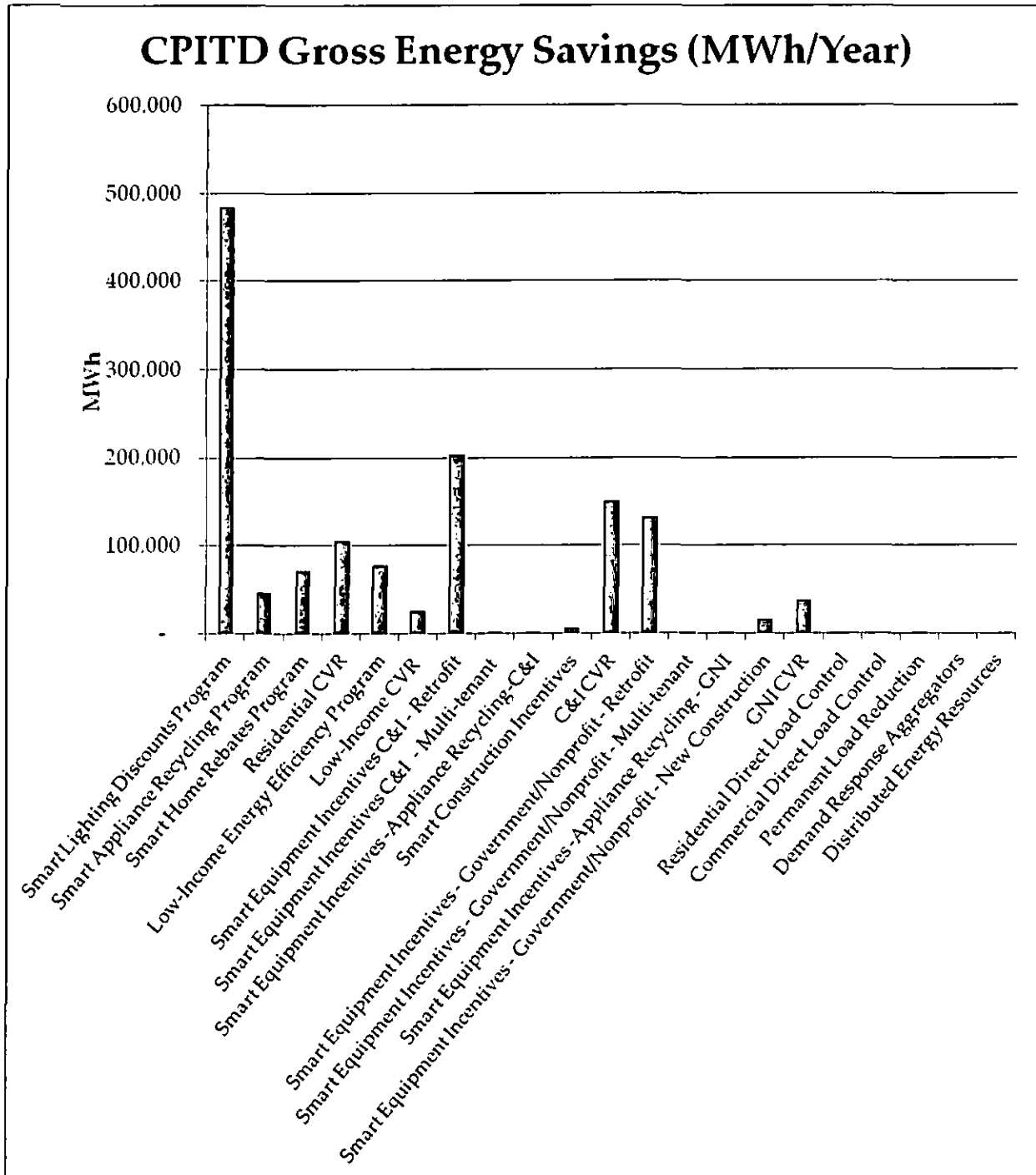
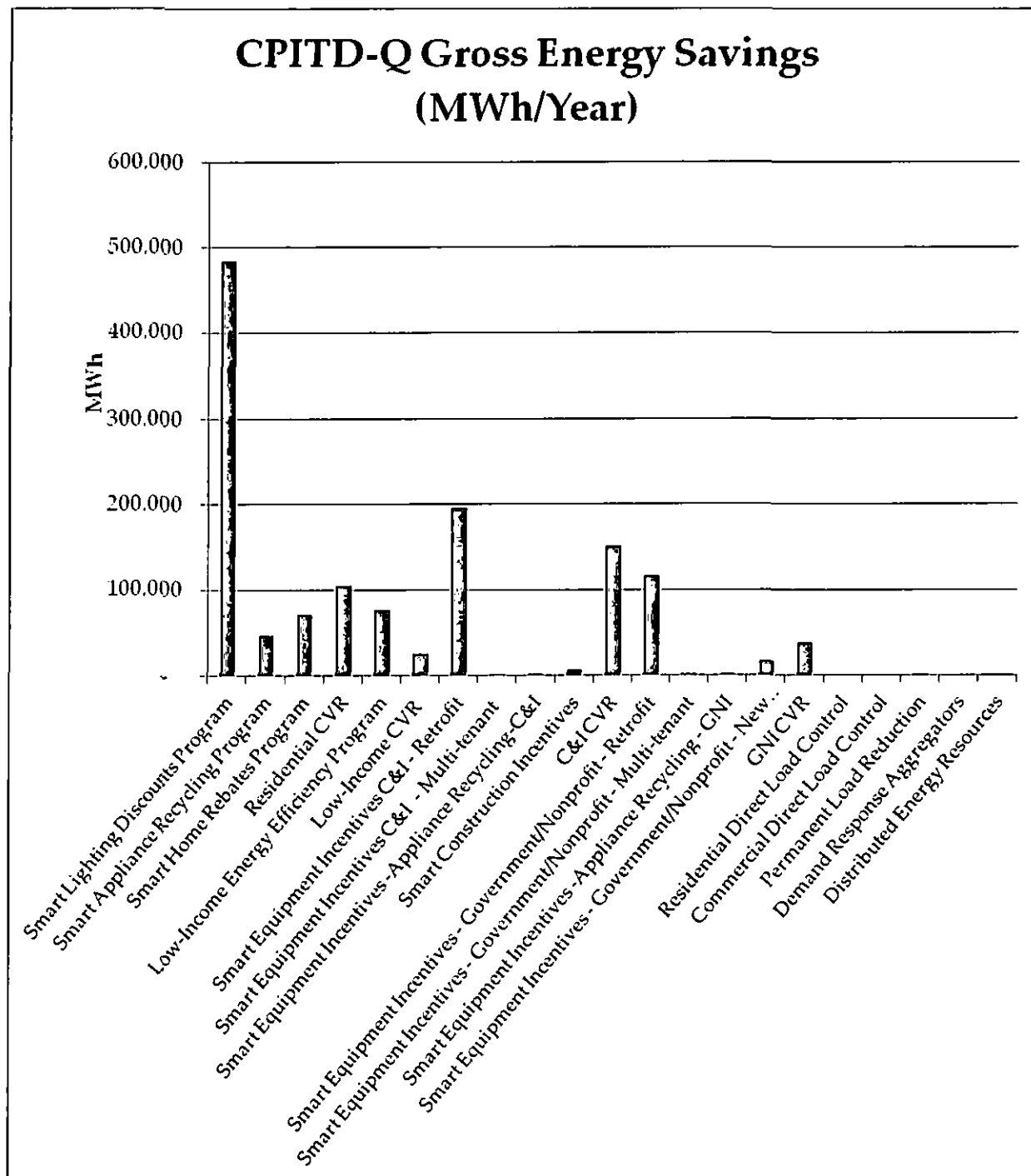


Figure 2-2 presents the sum of verified energy savings through the end of PY3 and gross reported energy savings from PY4 Q1 through PY4 Q3 for each program in the portfolio.

Figure 2-2. CPITD-Q Reported Gross Energy Savings by Program



A summary of energy impacts by program through PY4 Q3 is presented in Table 2-1. Note that the energy savings values presented in Table 2-1 for the Smart Lighting Discounts program reflect a conservative estimate of participation in that program by non-residential customers,

based on participant survey results. The conservative assumptions and analytical method supporting the impacts of this non-residential participation were first presented in PECO's Preliminary DR Report, and are included here as Appendix B.

**Table 2-1. EDC Reported Participation and Gross Energy Savings by Program**

Program	Participants			Reported Gross Impact (MWh/Year)				Preliminary Realization Rate <sup>1</sup>
	IQ	PYTD	CPITD	IQ	PYTD	CPITD	CPITD-Q	PYTD
<b>Residential</b>	<b>1,869</b>	<b>9,102</b>	<b>319,259</b>	<b>7,711</b>	<b>23,316</b>	<b>708,745</b>	<b>708,617</b>	<b>N/A</b>
Smart Lighting Discounts Program <sup>2</sup>	75,104	197,702	7,614,241	4,883	12,731	484,517	484,517	1
Smart Appliance Recycling Program	511	2,313	30,056	781	3,382	46,675	46,675	1
Smart Home Rebates Program <sup>3</sup>	1,358	6,789	289,203	2,048	7,203	71,830	71,702	N/A
Residential Conservation Voltage Reduction	N/A	N/A	N/A	-	-	105,723	105,723	1
<b>Low-Income Energy Efficiency Program Total<sup>4</sup></b>	<b>2,478</b>	<b>7,262</b>	<b>29,396</b>	<b>7,213</b>	<b>23,916</b>	<b>103,283</b>	<b>102,079</b>	<b>N/A</b>
Low-Income Energy Efficiency Program	2,478	7,262	29,396	7,213	23,916	77,654	76,449	N/A
Low-Income Conservation Voltage Reduction	N/A	N/A	N/A	-	-	25,630	25,630	1
<b>Non-Residential</b>	<b>75</b>	<b>384</b>	<b>4,478</b>	<b>36,595</b>	<b>96,389</b>	<b>549,272</b>	<b>525,413</b>	<b>N/A</b>
<b>Commercial and Industrial Total</b>	<b>33</b>	<b>203</b>	<b>3,493</b>	<b>3,290</b>	<b>40,095</b>	<b>361,848</b>	<b>353,354</b>	<b>N/A</b>
Smart Equipment Incentives – Retrofit	25	160	3,034	3,213	38,142	203,935	195,824	N/A
Smart Equipment Incentives - Multi-tenant <sup>5</sup>	-	28	389	-	287	426	426	N/A
Smart Equipment Incentives -Appliance Recycling	7	8	17	62	64	80	79	N/A
Smart Construction Incentives	1	7	53	15	1,601	6,832	6,449	N/A
C&I Conservation Voltage Reduction	N/A	N/A	N/A	-	-	150,575	150,575	1
<b>Government , Nonprofit Institutional Total</b>	<b>42</b>	<b>181</b>	<b>985</b>	<b>33,305</b>	<b>56,294</b>	<b>187,424</b>	<b>172,059</b>	<b>N/A</b>
Smart Equipment Incentives - Retrofit	34	149	851	29,757	49,120	132,661	116,539	N/A
Smart Equipment Incentives - Multi-tenant <sup>5</sup>	-	7	81	-	1	145	145	N/A
Smart Equipment Incentives -Appliance Recycling	-	-	5	-	-	33	32	N/A
Smart Equipment Incentives - New Construction	8	24	47	3,548	7,173	16,140	16,899	N/A
GNI Conservation Voltage Reduction	N/A	N/A	N/A	-	-	38,445	38,445	1

Program	Participants			Reported Gross Impact (MWh/Year)				Preliminary Realization Rate <sup>1</sup>
	IQ	PYTD	CPITD	IQ	PYTD	CPITD	CPITD-Q	PYTD
<b>Demand Reduction</b>	(943)	(817)	80,475	-	201	201	201	N/A
Residential Smart AC Saver	(902)	(578)	78,073	-	-	-	-	N/A
Commercial Smart AC Saver	(41)	(240)	2,206	-	-	-	-	N/A
Permanent Load Reduction	-	1	1	-	201	201	201	N/A
Demand Response Aggregators	-	-	193	-	-	-	-	N/A
Distributed Energy Resources	-	-	2	-	-	-	-	N/A
<b>Total Portfolio</b>	<b>3,479</b>	<b>15,930</b>	<b>433,607</b>	<b>51,520</b>	<b>143,823</b>	<b>1,361,502</b>	<b>1,336,310</b>	<b>N/A</b>
<b>NOTES:</b> <sup>1</sup> Preliminary Realization Rates are based on evaluation activities and findings conducted on a partial sample set. These realization rates are not based on a statistically significant sample and are subject to change until the full evaluation is complete at the end of the program year <sup>2</sup> Participation numbers shown are the numbers of discounted lamps sold. These are excluded from total portfolio participation numbers. The CPITD participant value reported here includes 17,856 lamps that were inadvertently removed from PY2 cumulative participation values, although their costs and savings were reported correctly in all previous reports. <sup>3</sup> Participant values exclude sales of Energy Star lighting fixtures and LED lamps, for which upstream rebates are provided. <sup>4</sup> Act 129 includes a provision requiring electric distribution companies to offer a number of energy efficiency measures to low-income households that are "proportionate to those households' share of the total energy usage in the service territory." 66 Pa.C.S. §2806.1(b)(i)(G). The legislation contains no provisions regarding targets for participation, or energy or demand savings. Participation includes only those receiving the Weatherization Audit. <sup>5</sup> The participation values shown here reflect the number of project IDs reported in the tracking data, rather than the number of billing account IDs. The values reported here better reflect the number of participating households, rather than the number of multi-family buildings in which the participants live.								

### 3 Summary of Demand Impacts by Program

A summary of the reported demand reduction by program is presented in Figure 3-1.

Figure 3-1. Reported Demand Reduction by Program

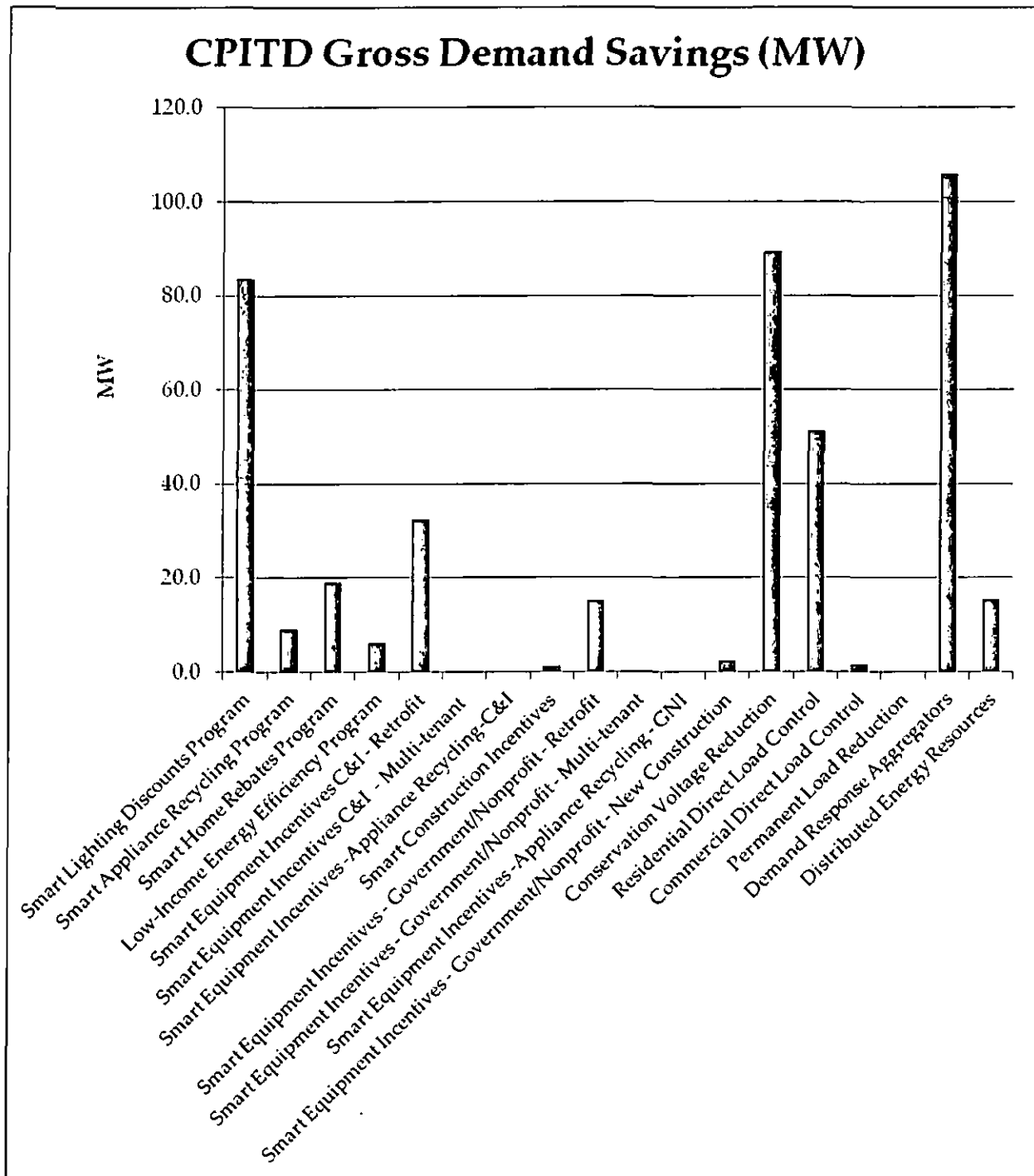
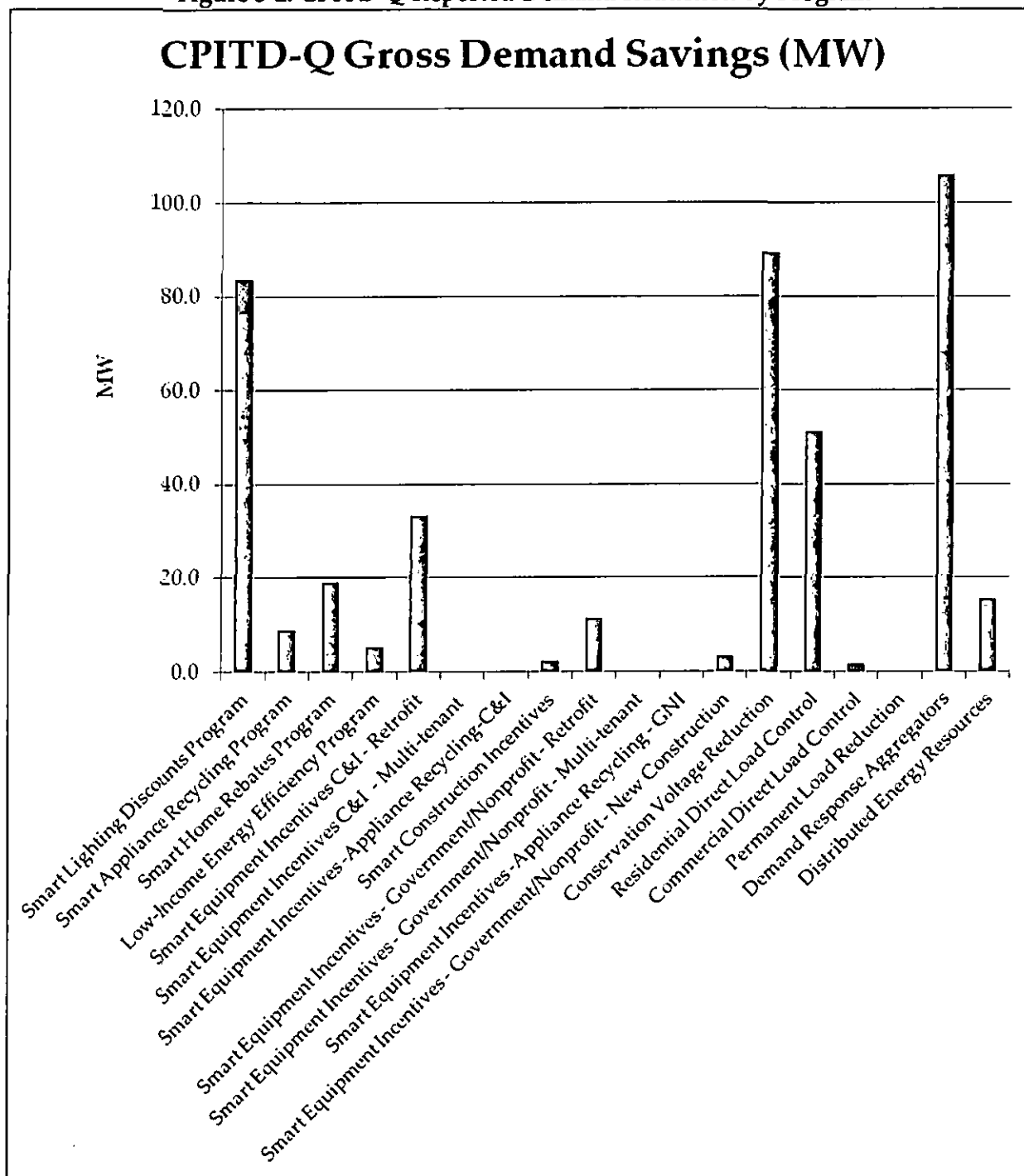


Figure 3-2 presents the sum of verified demand savings through the end of PY3 and gross reported demand savings from PY4 Q1 through PY4 Q3 for each program in the portfolio.

**Figure 3-2. CPITD-Q Reported Demand Reduction by Program**



A summary of demand reduction impacts by program through PY4 Q3 is presented in Table 3-1.

The PYTD MW values shown are the average MW impacts of PY4 activity over PECO's top 100 hours during the summer of 2012. For the DR programs, these values correspond precisely with those reported in PECO's March 1, 2013 Preliminary DR Report. The PYTD MW values for the EE programs are also averages over PECO's top 100 hours, but in some cases are higher than the values presented in the Preliminary DR Report for two reasons:

- Some programs rebated projects that were in commercial operation at some point during PECO's top 100 hours, but that were not entered into the tracking databases until Q3. Their impacts were therefore unknown at the time the Preliminary DR Report was submitted.
- The coincidence factor (CF) values specified in the TRM since 2009 for residential lighting installations significantly understate peak load impacts for the summer of 2012. The source document referenced as supporting the CF value in the TRM actually supports significantly higher values, apparently an error in the TRM. The referenced table in the source document<sup>5</sup> shows an average summer CF of 8.8% with summer monthly values ranging from 7.5 to 10.4%, as opposed to the 5% CF used in the TRM. The 8.8% value likely understates top 100 hour impacts due to the difference between the "peak window" used in that study (noon to 5:00 PM) and PECO's actual top 100 hours during the summer of 2012. Forty of PECO's top 100 hours fall outside of that window.

The SWE and TUS staff recently acknowledged that the CF contained in the TRM is in error,<sup>6</sup> and have since been engaged in a discussion with the EDCs about which of several potential residential lighting load shapes and methodologies to use in developing more accurate estimates of demand impacts from programs addressing residential lighting efficiency. For reasons presented in Appendix A to this report, Navigant believes the load shape developed by the 2009 Northeast residential lighting logger study conducted by Nexus Market Research, RLW Analytics, and GDS Associates presents the best match to current Pennsylvania

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<sup>5</sup> RLW Analytics, "Development of Common Demand Impacts for Energy Efficiency Measures/Programs for the ISO Forward Capacity Market (FCM)", prepared for the New England State Program Working Group (SPWG), March 25, 2007, p. IV.

<sup>6</sup> See the minutes of the Program Evaluation Group meeting from March 20, 2013 (forwarded to all EDCs and evaluators on March 29, 2013).



conditions.<sup>7</sup> Navigant has used that study to develop an average CF over PECO's top 100 hours during the summer of 2012. Navigant has applied the resulting 11.7% CF to all lamps subsidized by PECO's Smart Lighting Discounts program that were installed in residential sockets from PY1 through the day on which the last of PECO's top 100 hours occurred. Navigant has also applied this CF to the CFLs installed through Component 1 of PECO's Low-Income Energy Efficiency program over the same period.

Note that the demand reduction values presented in Table 3-1 for the Smart Lighting Discounts program reflect a conservative estimate of participation in that program by non-residential customers, based on participant survey results. The conservative assumptions and analytical method supporting the impacts of this non-residential participation were first presented in PECO's Preliminary DR Report, and are included here as Appendix B.

The combined impact of the more accurate CF and the conservative estimate of non-residential participation in PECO's SLD program adds 60.7 MW of demand reduction over PECO's top 100 hours. The application of the higher CF to LEEP Component 1 CFLs adds 0.25 MW of demand reduction over PECO's top 100 hours.

Finally, note that the IQ MW values in Table 3-1 are negative for some EE programs, because the PY4 Q1 and PY4 Q2 reports presented the totals of the ex-ante estimates for all projects completed in those quarters, rather than the impacts of only those projects that were installed and operating during some or all of PECO's top 100 hours. The negative IQ values are therefore necessary to make the PYTD totals equal to the actual impacts of each program over the top 100 hours.

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<sup>7</sup> Nexus Market Research, Inc., RLW Analytics, Inc., and GDS Associates, 2009. *Residential Lighting Markdown Impact Evaluation*. Prepared for Markdown and Buydown Program Sponsors in Connecticut, Massachusetts, Rhode Island, and Vermont. January 20, 2009.

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**Table 3-1. Participation and Reported Gross Demand Reduction during PECO's Top 100 Hours by Program**

Program	Participants			Reported Gross Impact (MW)				Preliminary Realization Rate <sup>1</sup>
	IQ	PYTD	CPITD	IQ	PYTD	CPITD	CPITD-Q	PYTD
<b>Residential</b>	<b>1,869</b>	<b>9,102</b>	<b>319,259</b>	<b>-1.3</b>	<b>1.3</b>	<b>111.9</b>	<b>111.6</b>	<b>N/A</b>
Smart Lighting Discounts Program <sup>2</sup>	75,104	197,702	7,614,241	0.0	0.3	83.6	83.6	1
Smart Appliance Recycling Program	511	2,313	30,056	-0.3	0.1	9.2	9.0	1
Smart Home Rebates Program <sup>3</sup>	1,358	6,789	289,203	-1.0	0.9	19.1	19.1	N/A
<b>Low-Income Energy Efficiency Program Total<sup>4</sup></b>	<b>2,478</b>	<b>7,262</b>	<b>29,396</b>	<b>0.0</b>	<b>1.0</b>	<b>6.3</b>	<b>6.3</b>	<b>N/A</b>
Low-Income Energy Efficiency Program	2,478	7,262	29,396	0.0	1.0	6.3	6.3	N/A
<b>Non-Residential</b>	<b>75</b>	<b>383</b>	<b>4,477</b>	<b>-1.9</b>	<b>7.9</b>	<b>51.4</b>	<b>50.6</b>	<b>N/A</b>
<b>Commercial and Industrial Total</b>	<b>33</b>	<b>203</b>	<b>3,493</b>	<b>-2.2</b>	<b>4.5</b>	<b>33.8</b>	<b>36.0</b>	<b>N/A</b>
Smart Equipment Incentives - Retrofit	25	160	3,034	-2.3	4.0	32.3	33.4	N/A
Smart Equipment Incentives - Multi-tenant <sup>5</sup>	-	28	389	0.0	0.0	0.2	0.2	N/A
Smart Equipment Incentives - Appliance Recycling	7	8	17	0.0	0.0	0.0	0.0	N/A
Smart Construction Incentives	1	7	53	0.2	0.5	1.3	2.4	N/A
<b>Government, Nonprofit, and Institutional Total</b>	<b>42</b>	<b>180</b>	<b>984</b>	<b>0.3</b>	<b>3.4</b>	<b>17.6</b>	<b>14.6</b>	<b>N/A</b>
Smart Equipment Incentives - Retrofit	34	149	851	-0.3	2.2	15.1	11.4	N/A
Smart Equipment Incentives - Multi-tenant <sup>5</sup>	-	7	81	0.0	0.0	0.0	0.0	N/A
Smart Equipment Incentives - Appliance Recycling	-	-	5	0.0	0.0	0.0	0.0	N/A
Smart Equipment Incentives - New Construction	8	24	47	0.6	1.2	2.4	3.2	N/A

Program	Participants			Reported Gross Impact (MW)				Preliminary Realization Rate <sup>1</sup>
	IQ	PYTD	CPITD	IQ	PYTD	CPITD	CPITD-Q	PYTD
<b>Demand Reduction</b>	(943)	(817)	80,475	0.0	174.5	263.8	263.8	N/A
Conservation Voltage Reduction	-	-	NA	0.0	0.0	89.3	89.3	N/A
Residential Smart AC Saver	(902)	(578)	78,073	0.0	51.3	51.3	51.3	N/A
Commercial Smart AC Saver	(41)	(240)	2,206	0.0	1.6	1.6	1.6	N/A
Permanent Load Reduction	-	1	1	0.0	0.1	0.1	0.1	N/A
Demand Response Aggregators	-	-	193	0.0	106.0	106.0	106.0	N/A
Distributed Energy Resources	-	-	2	0.0	15.4	15.4	15.4	N/A
<b>Total Portfolio</b>	<b>3,479</b>	<b>15,930</b>	<b>433,607</b>	<b>-3.2</b>	<b>184.6</b>	<b>433.3</b>	<b>432.3</b>	<b>N/A</b>
<p>NOTES:</p> <p><sup>1</sup>Preliminary realization rates are based on evaluation activities and findings conducted on a partial sample set. These realization rates are not based on a statistically significant sample and are subject to change until the full evaluation is complete following the end of the program year.</p> <p><sup>2</sup>Participation numbers shown are the numbers of discounted lamps sold. These are excluded from total portfolio participation numbers. The CPITD participant value reported here includes 17,856 lamps that were inadvertently removed from PY2 cumulative participation values, although their costs and savings were reported correctly in all previous reports.</p> <p><sup>3</sup>Participant values exclude sales of ENERGY STAR lighting fixtures and LED lamps, for which upstream rebates are provided.</p> <p><sup>4</sup>Act 129 includes a provision requiring electric distribution companies to offer a number of energy efficiency measures to low-income households that are “proportionate to those households’ share of the total energy usage in the service territory.” 66 Pa.C.S. §2806.1(b)(i)(G). The legislation contains no provisions regarding targets for participation, or energy or demand savings. Participation includes only those receiving the Weatherization Audit.</p> <p><sup>5</sup>The participation values shown here reflect the number of project IDs reported in the tracking data, rather than the number of billing account IDs. The values reported here better reflect the number of participating households, rather than the number of multi-family buildings in which the participants live.</p>								

To provide continuity with previous quarterly reports, Table 3-2 presents gross reported demand reduction for all efficiency measures installed through the end of PY4 Q3, regardless of whether or not measures were installed in time to contribute demand reduction during PECO's top 100 hours. Unlike Table 3-1, Table 3-2 does not adjust demand reduction from the Smart Lighting Discounts program for non-residential participation, nor does it correct for the error in the TRM CF for residential lighting.

**Table 3-2. Cumulative Participation and Reported Gross Demand Reduction: All Hours**

Program	Participants			Reported Gross Impact (MW)				Preliminary Realization Rate <sup>1</sup>
	IQ	PYTD	CPITD	IQ	PYTD	CPITD	CPITD-Q	PYTD
<b>Residential</b>	<b>1,869</b>	<b>9,102</b>	<b>319,259</b>	<b>0.9</b>	<b>3.5</b>	<b>53.6</b>	<b>53.4</b>	<b>N/A</b>
Smart Lighting Discounts Program <sup>2</sup>	75,104	197,702	7,614,241	0.2	0.5	23.3	23.3	1.0
Smart Appliance Recycling Program	511	2,313	30,056	0.1	0.5	9.6	9.4	1.0
Smart Home Rebates Program <sup>3</sup>	1,358	6,789	289,203	0.6	2.5	20.7	20.7	N/A
<b>Low-Income Energy Efficiency Program Total<sup>4</sup></b>	<b>2,478</b>	<b>7,262</b>	<b>29,396</b>	<b>0.4</b>	<b>1.4</b>	<b>6.4</b>	<b>5.5</b>	<b>N/A</b>
Low-Income Energy Efficiency Program	2,478	7,262	29,396	0.4	1.4	6.4	5.5	N/A
<b>Non-Residential</b>	<b>75</b>	<b>384</b>	<b>4,478</b>	<b>5.9</b>	<b>15.7</b>	<b>59.1</b>	<b>58.3</b>	<b>N/A</b>
<b>Commercial and Industrial Total</b>	<b>33</b>	<b>203</b>	<b>3,493</b>	<b>0.5</b>	<b>7.2</b>	<b>36.5</b>	<b>38.7</b>	<b>N/A</b>
Smart Equipment Incentives - Retrofit	25	160	3,034	0.5	6.9	35.2	36.2	N/A
Smart Equipment Incentives - Multi-tenant <sup>5</sup>	-	28	389	0.0	0.0	0.2	0.2	N/A
Smart Equipment Incentives -Appliance Recycling	7	8	17	0.0	0.0	0.0	0.0	N/A
Smart Construction Incentives	1	7	53	0.0	0.3	1.2	2.3	N/A
<b>Government, Nonprofit, and Institutional Total</b>	<b>42</b>	<b>181</b>	<b>985</b>	<b>5.3</b>	<b>8.4</b>	<b>22.6</b>	<b>19.7</b>	<b>N/A</b>
Smart Equipment Incentives - Retrofit	34	149	851	4.8	7.4	20.3	16.6	N/A
Smart Equipment Incentives - Multi-tenant <sup>5</sup>	-	7	81	0.0	0.0	0.0	0.0	N/A
Smart Equipment Incentives -Appliance Recycling	-	-	5	0.0	0.0	0.0	0.0	N/A
Smart Equipment Incentives - New Construction	8	24	47	0.5	1.1	2.3	3.1	N/A

Program	Participants			Reported Gross Impact (MW)				Preliminary Realization Rate <sup>1</sup>
	IQ	PYTD	CPITD	IQ	PYTD	CPITD	CPITD-Q	PYTD
<b>Demand Reduction</b>	<b>(943)</b>	<b>(817)</b>	<b>80,475</b>	<b>0</b>	<b>176</b>	<b>265.3</b>	<b>263.8</b>	<b>N/A</b>
Conservation Voltage Reduction	-	-	NA	0.0	0.0	89.3	89.3	N/A
Residential Smart AC Saver	(902)	(578)	78,073	0.0	52.8	52.8	51.3	1.0
Commercial Smart AC Saver	(41)	(240)	2,206	0.0	1.6	1.6	1.6	1.0
Permanent Load Reduction	-	1	1	0.0	0.1	0.1	0.1	N/A
Demand Response Aggregators	-	-	193	0.0	106.0	106.0	106.0	N/A
Distributed Energy Resources	-	-	2	0.0	15.4	15.4	15.4	N/A
<b>Total Portfolio</b>	<b>3,479</b>	<b>15,930</b>	<b>433,607</b>	<b>7.2</b>	<b>196.5</b>	<b>384.4</b>	<b>380.9</b>	<b>N/A</b>
<p>NOTES:</p> <p><sup>1</sup>Preliminary realization rates are based on evaluation activities and findings conducted on a partial sample set. These realization rates are not based on a statistically significant sample and are subject to change until the full evaluation is complete following the end of the program year.</p> <p><sup>2</sup>Participation numbers shown are the numbers of discounted lamps sold. These are excluded from total portfolio participation numbers. The CPITD participant value reported here includes 17,856 lamps that were inadvertently removed from PY2 cumulative participation values, although their costs and savings were reported correctly in all previous reports.</p> <p><sup>3</sup>Participant values exclude sales of ENERGY STAR lighting fixtures and LED lamps, for which upstream rebates are provided.</p> <p><sup>4</sup>Act 129 includes a provision requiring electric distribution companies to offer a number of energy efficiency measures to low-income households that are "proportionate to those households' share of the total energy usage in the service territory." 66 Pa.C.S. §2806.1(b)(i)(G). The legislation contains no provisions regarding targets for participation, or energy or demand savings. Participation includes only those receiving the Weatherization Audit.</p> <p><sup>5</sup>The participation values shown here reflect the number of project IDs reported in the tracking data, rather than the number of billing account IDs. The values reported here better reflect the number of participating households, rather than the number of multi-family buildings in which the participants live.</p>								



## 4 Summary of Finances

### 4.1 Portfolio-Level Expenditures

A breakdown of the portfolio finances is presented in Table 4-1.

**Table 4-1. Summary of Portfolio Finances**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$3,502	\$21,640	\$73,366
EDC Incentives to Trade Allies	\$161	\$383	\$8,703
<b>Subtotal EDC Incentive Costs</b>	<b>\$3,664</b>	<b>\$22,022</b>	<b>\$82,068</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$3,778	\$17,502	\$63,239
Management <sup>[2]</sup>	\$805	\$3,229	\$26,336
Marketing	\$336	\$1,737	\$10,248
Technical Assistance	\$755	\$2,665	\$12,592
<b>Subtotal EDC Implementation Costs</b>	<b>\$5,675</b>	<b>\$25,133</b>	<b>\$112,414</b>
EDC Evaluation Costs	\$577	\$1,350	\$7,028
SWE Audit Costs	N/A	N/A	N/A
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order –Net participant costs refer to the costs of the end-use customer.			



## 4.2 Program-Level Expenditures

Program-specific finances are shown in the following tables.

**Table 4-2. Low-Income Energy Efficiency Program**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$187	\$658	\$2,639
Management <sup>[2]</sup>	\$75	\$208	\$1,199
Marketing	\$35	\$372	\$744
Technical Assistance	\$755	\$2,665	\$12,592
<b>Subtotal EDC Implementation Costs</b>	<b>\$1,052</b>	<b>\$3,903</b>	<b>\$17,174</b>
EDC Evaluation Costs	\$36	\$106	\$461
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Cost refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			

**Table 4-3. Smart Lighting Discounts Program**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$0	\$0
EDC Incentives to Trade Allies	\$107	\$284	\$8,390
<b>Subtotal EDC Incentive Costs</b>	<b>\$107</b>	<b>\$284</b>	<b>\$8,390</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$123	\$350	\$2,464
Management <sup>[2]</sup>	\$86	\$229	\$1,011
Marketing	\$79	\$406	\$3,640
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$288</b>	<b>\$985</b>	<b>\$7,115</b>
<b>EDC Evaluation Costs</b>	<b>\$68</b>	<b>\$137</b>	<b>\$893</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to, the costs of the end-use customer.			

**Table 4-4. Smart Appliance Recycling Program**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$8	\$36	\$1,068
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$8</b>	<b>\$36</b>	<b>\$1,068</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$46	\$207	\$2,742
Management <sup>[2]</sup>	\$61	\$173	\$919
Marketing	\$4	\$80	\$639
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$111</b>	<b>\$459</b>	<b>\$4,299</b>
<b>EDC Evaluation Costs</b>	<b>\$20</b>	<b>\$41</b>	<b>\$237</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order –Net participant costs refer to the costs of the end-use customer.			

**Table 4-5. Smart Home Rebates Program**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$400	\$1,596	\$22,006
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$400</b>	<b>\$1,596</b>	<b>\$22,006</b>
Design & Development	\$0	\$0	\$0
Administration <sup>11</sup>	\$313	\$925	\$7,706
Management <sup>12</sup>	\$226	\$526	\$2,602
Marketing	\$96	\$395	\$2,812
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$634</b>	<b>\$1,846</b>	<b>\$13,120</b>
<b>EDC Evaluation Costs</b>	<b>\$76</b>	<b>\$154</b>	<b>\$901</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>13</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>14</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			

**Table 4-6. Smart Equipment Incentives C&I**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$189	\$3,211	\$15,178
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$189</b>	<b>\$3,211</b>	<b>\$15,178</b>
Design & Development	\$0	\$0	\$0
Administration <sup>111</sup>	\$617	\$2,118	\$8,784
Management <sup>121</sup>	\$101	\$334	\$2,031
Marketing	\$22	\$175	\$1,181
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$740</b>	<b>\$2,627</b>	<b>\$11,996</b>
EDC Evaluation Costs	\$167	\$490	\$1,845
SWE Audit Costs	N/A	N/A	N/A
<b>Total EDC Costs<sup>131</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>141</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order –Net participant costs refer to the costs of the end-use customer.			

**Table 4-7. Smart Equipment Incentives – Government, Non-Profit, and Institutional**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$2,903	\$4,908	\$13,839
EDC Incentives to Trade Allies	\$54	\$74	\$169
<b>Subtotal EDC Incentive Costs</b>	<b>\$2,957</b>	<b>\$4,982</b>	<b>\$14,008</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$836	\$1,668	\$5,351
Management <sup>[2]</sup>	\$62	\$186	\$1,214
Marketing	\$18	\$59	\$447
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$916</b>	<b>\$1,913</b>	<b>\$7,012</b>
<b>EDC Evaluation Costs</b>	<b>\$81</b>	<b>\$163</b>	<b>\$908</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order –Net participant costs refer to the costs of the end-use customer.			

**Table 4-8. Smart Construction Incentives**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$1	\$193	\$806
EDC Incentives to Trade Allies	\$0	\$25	\$144
<b>Subtotal EDC Incentive Costs</b>	<b>\$1</b>	<b>\$218</b>	<b>\$950</b>
Design & Development	\$0	\$0	\$0
Administration <sup>11</sup>	\$46	\$142	\$542
Management <sup>12</sup>	\$10	\$34	\$147
Marketing	\$0	\$11	\$65
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$56</b>	<b>\$187</b>	<b>\$754</b>
<b>EDC Evaluation Costs</b>	<b>\$3</b>	<b>\$6</b>	<b>\$72</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>13</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>14</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			

**Table 4-9. Conservation Voltage Reduction**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$0	\$239	\$1,950
Management <sup>[2]</sup>	\$4	(\$25)	\$134
Marketing	\$0	\$0	\$0
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$4</b>	<b>\$214</b>	<b>\$2,084</b>
<b>EDC Evaluation Costs</b>	<b>\$15</b>	<b>\$30</b>	<b>\$184</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			



**Table 4-10. Residential Smart AC Saver**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$11,156	\$19,784
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$11,156</b>	<b>\$19,784</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$0	\$1,965	\$9,353
Management <sup>[2]</sup>	\$98	\$850	\$13,452
Marketing	\$83	\$137	\$442
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$181</b>	<b>\$2,951</b>	<b>\$23,246</b>
EDC Evaluation Costs	\$42	\$84	\$546
SWE Audit Costs	N/A	N/A	N/A
Total EDC Costs <sup>[3]</sup>	N/A	N/A	N/A
Participant Costs <sup>[4]</sup>	N/A	N/A	N/A
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			

**Table 4-11. Commercial Smart AC Saver**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$504	\$649
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$504</b>	<b>\$649</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$37	\$374	\$3,387
Management <sup>[2]</sup>	\$32	\$115	\$823
Marketing	\$0	\$104	\$280
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$69</b>	<b>\$592</b>	<b>\$4,489</b>
EDC Evaluation Costs	\$14	\$29	\$205
SWE Audit Costs	N/A	N/A	N/A
Total EDC Costs <sup>[3]</sup>	N/A	N/A	N/A
Participant Costs <sup>[4]</sup>	N/A	N/A	N/A
<b>EDC Incentives to Participants</b>	<b>\$0</b>	<b>\$504</b>	<b>\$649</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order –Net participant costs refer to the costs of the end-use customer.			

**Table 4-12. Permanent Load Reduction**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$35	\$35
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$35</b>	<b>\$35</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$45	\$115	\$421
Management <sup>[2]</sup>	\$6	\$26	\$276
Marketing	\$0	\$0	\$0
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$51</b>	<b>\$141</b>	<b>\$697</b>
<b>EDC Evaluation Costs</b>	<b>\$8</b>	<b>\$15</b>	<b>\$92</b>
<b>SWE Audit Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total EDC Costs<sup>[3]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Participant Costs<sup>[4]</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			

**Table 4-13. Demand Response Aggregators**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$1,218	\$7,417	\$16,162
Management <sup>[2]</sup>	\$25	\$218	\$1,110
Marketing	\$0	\$0	\$0
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$1,243</b>	<b>\$7,635</b>	<b>\$17,272</b>
EDC Evaluation Costs	\$18	\$37	\$325
SWE Audit Costs	N/A	N/A	N/A
Total EDC Costs <sup>[3]</sup>	N/A	N/A	N/A
Participant Costs <sup>[4]</sup>	N/A	N/A	N/A
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order –Net participant costs refer to the costs of the end-use customer.			

**Table 4-14. Distributed Energy Resources**

	<b>Quarter (\$000)</b>	<b>PYTD (\$000)</b>	<b>CPITD (\$000)</b>
EDC Incentives to Participants	\$0	\$0	\$0
EDC Incentives to Trade Allies	\$0	\$0	\$0
<b>Subtotal EDC Incentive Costs</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Design & Development	\$0	\$0	\$0
Administration <sup>[1]</sup>	\$309	\$1,325	\$1,738
Management <sup>[2]</sup>	\$19	\$354	\$1,417
Marketing	\$0	\$0	\$0
Technical Assistance	\$0	\$0	\$0
<b>Subtotal EDC Implementation Costs</b>	<b>\$328</b>	<b>\$1,680</b>	<b>\$3,156</b>
EDC Evaluation Costs	\$29	\$59	\$360
SWE Audit Costs	N/A	N/A	N/A
Total EDC Costs <sup>[3]</sup>	N/A	N/A	N/A
Participant Costs <sup>[4]</sup>	N/A	N/A	N/A
<b>Total TRC Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>NOTES</b>			
<i>Per PUC direction, TRC inputs and calculations are required in the Annual Report only and should comply with the 2011 Total Resource Cost Test Order approved July 28, 2011.</i>			
<sup>1</sup> Implementation contractor costs.			
<sup>2</sup> EDC costs other than those identified explicitly.			
<sup>3</sup> Per the 2011 Total Resource Cost Test Order – Total EDC Costs refer to EDC incurred expenses only.			
<sup>4</sup> Per the 2011 Total Resource Cost Test Order – Net participant costs refer to the costs of the end-use customer.			

## **Appendix A. Selection of Residential Lighting Coincidence Factor**

Previously, demand reduction impacts for residential lighting measures have been calculated using the peak load coincidence factor of 5% in the 2012 Pennsylvania TRM. This value comes from a 2007 report by RLW Analytics, entitled “Development of Common Demand Impacts for Energy Efficiency Measures/Programs for the ISO Forward Capacity Market (FCM)”.<sup>8</sup> As the 5% CF has been acknowledged by both the SWE and the TUS to be erroneous,<sup>9</sup> Navigant has used a residential lighting load shape developed through the 2009 Northeast residential lighting logger study conducted by Nexus Market Research, RLW Analytics, and GDS Associates (the NMR 2009 study) to calculate a revised CF of 11.7% over PECO’s top 100 hours during the summer of 2012.<sup>10</sup> Navigant has used this value to re-calculate CPITD verified demand reduction for all residential lighting measures subsidized through its Smart Lighting Discounts program and Component 1 (installation of “extra CFLs”) of its Low-Income Energy Efficiency Program.

Navigant’s decision to adopt this value comes from a review of lighting logger studies based on sample size, geographic relevance, availability of load shape data for summer peak demand savings calculations, and the date of the study. Specifically, the 2009 Northeast study had a sample size of 657 lighting loggers spread across 157 homes. Homes were randomly selected from among a large recruitment pool, and loggers were all in place for June, July, and August of 2008, as well as spring and fall months. It is noteworthy that this is the study that is cited for annual hours of use in the 2013 PA TRM.

Other lighting logger studies Navigant reviewed for the purpose of updating the peak load coincidence factor included: EmPOWER Maryland 2010-2011, 2006-2008 California Upstream Lighting Program, 2005 California Residential CFL Metering, and the 2008 DEER CFL load shape. The EmPOWER Maryland 2010-2011 study featured fewer loggers than the 2009 Northeast study, with a total of 377 loggers across 131 homes. In the Maryland study, there was not a large pool of recruited homes from which the sample could be selected at random. The Maryland study also yielded a modeled seasonal curve of CF values with a distinctly greater

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<sup>8</sup> RLW Analytics, “Development of Common Demand Impacts for Energy Efficiency Measures/Programs for the ISO Forward Capacity Market (FCM)”, prepared for the New England State Program Working Group (SPWG), March 25, 2007, p. IV.

<sup>9</sup> See the minutes of the Program Evaluation Group meeting from March 20, 2013 (forwarded to all EDCs and evaluators on March 29, 2013).

<sup>10</sup> Nexus Market Research, Inc., RLW Analytics, Inc., and GDS Associates, 2009. Residential Lighting Markdown Impact Evaluation. Prepared for Markdown and Buydown Program Sponsors in Connecticut, Massachusetts, Rhode Island, and Vermont. January 20, 2009.

amplitude than that seen in other studies. The 2006-2008 California Upstream Lighting Program study included loggers in over 1200 homes. However, the report does not include an hourly load shape and cannot be adapted for the calculation of demand reduction in the top 100 hours. The 2005 California Residential CFL Metering Study installed meters on 983 CFLs in 375 homes. This study includes a large sample size and excellent study methodology, but the data are comparatively old and from a geographic location further removed from Pennsylvania than the 2009 Northeast study. The 2008 DEER CFL load shape is based on the same data from the 2005 Residential CFL Metering Study, but also incorporates the impact of lighting-HVAC interactive effects on summer peak load shapes. Because these interactive effects are influenced by climate and other considerations, these adjusted load shapes do not represent a best fit for Pennsylvania.

For the foregoing reasons, the 2009 NMR study provides the best match to Pennsylvania conditions of the available residential lighting load studies.

Navigant used the NMR 2009 residential lighting load shape to calculate hourly coincidence factors for every hour of the year. The average of these hourly CFs during PECO's top 100 hours during the summer of 2012 is 11.7%.

## **Appendix B. Demand Reduction from Smart Lighting Discount Lamps Installed in Non-residential Facilities**

In accordance with the requirements in Section 2.A.11 of Act 129 which precludes cross subsidization of measure incentives across customer classes, the evaluation team recognizes the need to account for the non-residential installations of CFL bulbs rebated through PECO's Smart Lighting Discounts program.

Based on in-store surveys of customers at the time of purchases ('in-store intercepts') during the Program Year 2 (PY2) evaluation, the evaluation determined a significant portion of Smart Lighting Discounts (SLD) bulbs have been installed in commercial and industrial settings. Bulbs used in nonresidential settings have a substantially higher peak load coincidence factor and hours of use than bulbs used in residential settings. CPITD verified peak demand reduction as of the end of PY3 have been adjusted to reflect this fact.

In previous compliance reporting, peak demand reduction from all program bulbs were calculated per the applicable Pennsylvania Technical Reference Manual (TRM) using the deemed residential peak load coincidence factor of 5% and demand  $ISR_{CFL}$  of 84% for PY3. The data collected from the in-store intercept customer surveys in PY2 indicated that approximately 12.2% of SLD program bulbs were installed in commercial settings. Note that this 12.2% represents the mean estimate of C&I installations using a weighted average of number of bulbs installed in commercial applications and not the percentage of customers purchasing bulbs. This proportion was relatively consistent across standard compact fluorescent lamp (CFL) and specialty CFL installations.

The evaluation team developed verified savings estimates of savings addressing comments by the Pennsylvania Statewide Evaluator (SWE) that using the 12.2% mean estimate of the C&I installations could over estimate savings.

### **Magnitude of Percent of Installation**

The estimates of installations in C&I applications are based on findings from the in-store intercept surveys that were completed in PY2. Of the 144 respondents that purchased CFLs and confirmed they would be installed in PECO's service territory, nine indicated they would be installing at least some of them in a commercial application. Of these nine, three indicated that all purchased CFLs would be installed in a commercial facility and six indicated some would be installed in their residence and some in a commercial facility. Of these six customers, for those that purchased up to twice the average number of bulbs purchased by residential customers, calculations assume 50% of bulbs would be installed in the commercial facility and 50% would be installed in the residence. For the commercial customers purchasing more than twice the average number of CFLs purchased by residential only customers (5.14 CFLs), calculations



assume that only 5.14 CFLs would be installed in their residence, and the rest would be installed in the commercial facility. Findings yield an estimated mean installation rate in C&I applications of 12.2%.

The SWE noted that other studies have shown a lower percentage of utility upstream buydown program bulbs are installed in commercial or industrial applications. The evaluation team conducted a literature review to compare what the installations in C&I applications are in other jurisdictions. Typical findings showed C&I installation rates closer to 6%.

Although it is industry standard practice to apply the mean estimate of evaluation findings to determine verified savings, in this case the evaluation team agrees with the SWE that the 12.2% may overestimate the percentage of bulbs being installed in C&I applications. At a 90% confidence, the 12.2% estimate has an interval of plus or minus 4.5%, resulting in a range of 7.7% up to 16.7% C&I installations. The evaluation team believes the 7.7% is likely closer to the real value or at least provides a conservative estimate of the real value. Final verified demand reductions are based on the lower bound of 7.7% C&I installation rate.

#### **Determining C&I EFLH and CF**

The SWE commented that installation rates and effective full-load hours (EFLH) and CF should be calculated using a weighted average approach. The evaluation team agrees, and this method was used to calculate C&I EFLH and CF values. C&I EFLH and CF were determined using a weighted average based on number of CFL purchases and the stipulated values from the TRM. For the three customers indicating all CFLs would be installed in a commercial facility, the one customer with the largest purchase of these three did not provide a business type that could be easily mapped to the TRM business types. This customer was included in the calculations for determining total C&I bulb installation percentages, but was excluded from the calculations for average building hours of use and CF so as not to skew the results with information that is based on an unknown building type. Using peak load coincidence factors for CFLs by commercial building type from the TRM, and weighting these coincidence factors by the reported proportions of installation in restaurants, offices, industrial/agricultural, and health care buildings, yielded a commercial and industrial (C&I) peak load coincidence factor of 79% and EFLH of 4532.

#### **Verified Demand Reductions**

To provide verified program savings for PECO's SLD program and accounting for all C&I installations while addressing the SWE comments, the evaluation team applied these PY2 findings using the lower bound of 7.7% for proportion of bulbs going into C&I facilities and the associated peak load coincidence factor to program bulb sales from PY1-PY3. The residential peak period line loss factor of 1.1916 was applied to the residential proportion of installations, while the small C&I peak line loss factor of 1.111 was applied to the C&I installations. Further, because the C&I algorithms do not include an ISR factor, the evaluation team applied the verified PECO Smart Equipment Incentives (SEI) C&I program realization rates (RR) for each

program year to the savings calculations for the C&I portion of the rebated CFLs. This adjusted calculation yields total CPITD peak demand reduction of 83.3 megawatts (MW) at the end of PY3, with 48.6 MW coming from the residential installations and 34.6 MW coming from the C&I installations. This represents an increase of 60.5 MW over the 22.8 MW that were reported in the PY3 Annual Report, which was based on the assumption of 100% residential installation.

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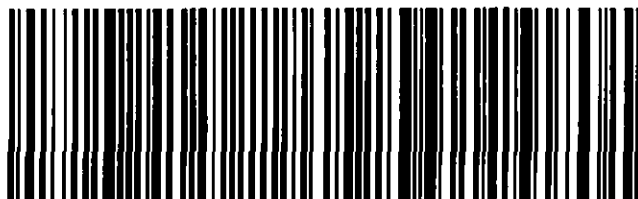
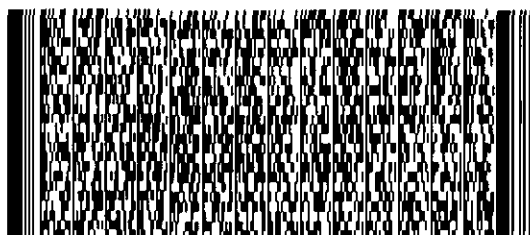
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.