BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Deree J. Norman 5367 Thomas Ave Philadelphia, PA 19143 Complainant Vs. PECO Energy Company Exelon Business Services 2301 Market Street S23-1 Philadelphia, PA 19103 Respondent	C-2015-2472605

PRO SE COMPLAINANT DEREE J. NORMAN'S SUPPLEMENTAL BRIEF IN SUPPORT OF HIS MOTION FOR JUDMENT ON THE PLEADINGS AND MOTION FOR SUMMARY JUDGMENT

I. INTRODUCTION

Pursuant to 52 Pa. 5 § 5.102 and § 5.501 Pro Se Complainant Deree J. Norman (hereafter referred to as the Complainant) respectfully moves this Honorable Commission to accept this Supplemental Brief in support of his Motion for Judgment on the Pleadings as well as his Motion for Summary Judgment and thereby Grant his Motion for Summary Judgment against PECO Energy Company an Exelon Business Services Company (hereafter referred to as Respondent or PECO). (See: Motion for Summary Judgment filed March 14, 2016)

Complainant's action against Respondent arose from specific allegations that Respondent committed fraud by a continued manipulation and falsification of kilowatt (kWh) usage in relation to his account, (Account No. 19273-01508).

EXHIBIT 1

PECO ENERGY COMPANY
STATEMENT NO. 1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PECO ENERGY COMPANY
FOR APPROVAL OF ITS
SMART METER UNIVERSAL DEPLOYMENT PLAN

DOCKET NO. M-2009-2123944

DIRECT TESTIMONY

WITNESS: MICHAEL INNOCENZO

SUBJECT: ACT 129 SMART METER REQUIREMENTS, COMPONENTS OF PECO'S SMART METER PROJECT, PHASE ONE IMPLEMENTATION, UNIVERSAL DEPLOYMENT PLAN, CYBER SECURITY AND DATA PRIVACY, DEFERRAL OF STRANDED METER COSTS

DATED: January 18, 2013

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DIRECT TESTIMONY
OF
MICHAEL INNOCENZO

I. INTRODUCTION AND PURPOSE OF TESTIMONY

1. Q. Please state your name and business address.

A. My name is Michael Innocenzo. My business address is PECO Energy Company, 2301 Market Street, Philadelphia, PA 19103.

2. Q. By whom are you employed and in what capacity?

A. I am employed by PECO Energy Company ("PECO" or the "Company") as Senior Vice President, Operations.

3. Q. What are your duties and responsibilities in this position?

A. I am responsible for leadership of PECO's overall performance associated with operations, safety, service reliability, customer satisfaction and financial management.

4. Q. Please describe your educational background and your professional experience.

A. I previously served as Vice President, Distribution System Operations and Smart Grid/Smart Meter, where I was responsible for the operation of the Company's electric and natural gas distribution systems, as well as the design and deployment of the Smart Grid and Smart Meter system in PECO's service territory. Prior to that position, I served as the Director of Gas Operations, Quality Services and Performance Improvement. I also served as a Regional Director in the Philadelphia,

Delaware and Chester County regions, as well as Regional Engineering Manager for Delaware and Chester Counties. In addition, I was the Emergency Services Supervisor in Philadelphia Region and a Project Engineer in the Philadelphia and Montgomery County Divisions. I received a bachelor's degree in electrical engineering from Widener University and a master's of business administration from Villanova University.

5. Q. Have you testified previously before this Commission or other regulatory or legislative bodies?

A. Yes, on October 12, 2011, I testified before the Commission as part of its Special Electric Reliability Forum on Hurricane Irene. I also provided testimony to the Senate Veterans Affairs and Emergency Preparedness and Consumer Protection and Professional Licensure Committees regarding the same hurricane. In addition, on September 13, 2012, I testified before the Commission during an informal, informational hearing about meter overheating incidents relating to PECO's advanced metering infrastructure ("AMI") deployment.

6. Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an overview of the second phase ("Phase Two") of PECO's Smart Meter Technology Procurement and Installation Plan (the "Smart Meter Plan" or "Plan") and is divided into five parts. First, I describe PECO's smart meter obligations under Act 129 of 2008 ("Act 129" or the "Act"). Second, I discuss the key components of the Company's proposed smart meter project. Third, I summarize the mitigation actions taken by PECO during "Phase One" of the Smart

Meter Plan. Fourth, I describe the Company's proposed Smart Meter Universal Deployment Plan ("Universal Deployment Plan"). Finally, I discuss PECO's plans to address cyber security, data privacy and meter incident cost recovery issues.

II. OVERVIEW OF ACT 129 SMART METER REQUIREMENTS

7. Q. Please describe Act 129's smart meter requirements.

A. Act 129 directed electric distribution companies ("EDCs") to file with the Commission, by August 14, 2009, a smart meter technology procurement and installation plan. 66 Pa.C.S. § 2807(f). Each EDC smart meter plan was to describe the smart meter technologies the EDC proposed to install in accordance with a depreciation schedule not to exceed 15 years and in response to customer requests and new construction. *Id*. The Act also required EDCs to make available to third parties direct meter access and electronic access to meter data, upon customer consent, and to offer a time-of-use ("TOU") rate and real-time price plan to customers. *Id*. Additionally, the Act defined minimum smart meter technology capabilities and provided a mechanism for EDCs to fully recover all of their prudent and reasonable costs. 66 Pa.C.S. §§ 2807(f), (g).

In June 2009, the Commission issued an Implementation Order: (1) detailing plan filing requirements, including key milestones to be addressed; (2) establishing a 30-month grace period following plan approval for the installation of a smart meter network; (3) describing the Commission's expectations for smart meter capabilities; and (4) providing guidance on how EDCs may recover their smart meter program

costs. *See Smart Meter Procurement and Installation*, Implementation Order, Docket No. M-2009-2092655 (Order entered June 24, 2009) ("*Implementation Order*").

8. Q. Did PECO submit a smart meter plan in accordance with Act 129?

A. Yes. On August 14, 2009, the Company filed a Petition for approval of its proposed Smart Meter Plan. Various parties intervened in the ensuing proceeding and filed testimony addressing elements of the Smart Meter Plan. On November 25, 2009, a Joint Petition for Partial Settlement was filed that resolved all issues in the proceeding except for the allocation and recovery of smart meter costs, which issues were reserved for the Commission to decide. Under the terms of the Joint Petition for Partial Settlement, PECO made a number of commitments, including: (1) a commitment to address customer research and education on smart meters in a separate filing; and (2) a commitment to conduct a series of stakeholder collaborative meetings to obtain input from interested parties on significant elements of smart meter procurement and implementation. By its Order entered on May 6, 2010, the Commission approved the final Smart Meter Plan and decided outstanding issues not resolved by the settlement. *See Petition of PECO Energy Company for Approval of its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123944.

9. Q. Did the Company make a separate filing addressing customer research and education?

A. Yes. The Company filed its proposed Dynamic Pricing and Customer Acceptance Plan (the "Dynamic Pricing Plan") on October 28, 2010, which described plans to

offer TOU rates as required by Act 129 and to test customer acceptance of those rates. *See Petition of PECO Energy Company for Approval of its Initial Dynamic Pricing and Customer Acceptance Plan,* Docket No. M-2009-2123944. The Commission approved PECO's final Plan by Order entered April 15, 2011. In response to a Commission Order recommending that EDCs utilize an electric generation supplier ("EGS") to satisfy their TOU requirement[1], PECO filed a supplement to its Dynamic Pricing Plan on April 2, 2012. *See Petition of PECO Energy Company for Expedited Approval of its Dynamic Pricing Plan Vendor Selection and Dynamic Pricing Plan Supplement,* Docket No. P-2012-2297304. On September 13, 2012, the Commission approved the revised Dynamic Pricing Plan with certain modifications. PECO is currently working with its selected EGS on implementation planning for its TOU service pursuant to its Commission-approved pilot program.

10. Q. Did PECO take any steps to mitigate the cost of its Smart Meter Plan?

A. Yes, it did. Concomitant with its filing for Commission approval of its proposed Smart Meter Plan, PECO also applied for, and was awarded, a $200 million Smart Grid Investment Grant ("SGIG") from the Department of Energy ("DOE") under the American Recovery and Reinvestment Act of 2009. Of the total $200 million grant, approximately $140 million was designed to offset PECO's initial smart meter deployment costs. More specifically, in its approved Smart Meter Plan, the Company committed to use that component of its SGIG funding to: (1) expand from 100,000 to 600,000 the number of smart meters it would install during the initial phase of

[1] See Investigation of Pennsylvania's Retail Electricity Market: Recommendations Regarding Upcoming Default Service Plans, Docket No. I-2011-2237952 (Order entered December 16, 2011), p. 47.

deployment; and (2) complete the universal deployment of smart meters within ten years of Plan approval, or five years sooner than Act 129 requires. In addition, by accepting SGIG program funds, PECO is obligated to install 600,000 smart meters by the DOE-specified milestone date (i.e., April 2014).

11. Q. Please briefly describe the components of PECO's approved Smart Meter Plan.

A. As I will discuss in greater detail in Sections III and IV below, the Plan outlines a two-phase strategy for deploying smart meter technology throughout PECO's service territory in accordance with the requirements of Act 129. Phase One comprises the selection, testing and validation of the smart meter technology to be deployed; the deployment of the advanced metering infrastructure communication network; the initial deployment of 600,000 smart meters; and the development of a program to educate customers and implement initial dynamic pricing options. Phase Two will substantially complete the deployment of smart meters across PECO's service territory.

III. COMPONENTS OF PECO'S SMART METER PROJECT

12. Q. Please describe the major components of PECO's smart meter project.

A. The major components of the project fall into five categories: (1) the AMI System; (2) the Communications Network; (3) the Information Technology ("IT") Systems; (4) the smart meters themselves; and (5) the Web Presentment Platform.

The AMI System

The **AMI Host** is the master controller for the AMI System. It is responsible for managing all communications and meter readings. It is also responsible for ensuring that the system is secure and data are successfully transmitted to and from the smart meters.

The **AMI Network** is the communications infrastructure that transports meter readings, data, and commands between the meters and the AMI Host. The communications capabilities provided by this network will be bi-directional all the way to the meter and to the premises, which is not possible within PECO's existing Automated Meter Reading ("AMR") system.

The Communications Network

The **Communications Network** is comprised of: (1) the Core Foundation Network, which is a higher capacity transport system from the AMI Network to the AMI Host; and (2) additional communications solutions that bridge the AMI Network and the Core Foundation network when necessary.

The IT Systems

The **Meter Data Management System ("MDMS")** is responsible for processing and storing meter information, interval data, and events, and analyzing raw meter data. It provides interfaces to other applications that require meter-related data. The MDMS is also responsible for a process commonly called "VEE" – Validating, Editing and

Estimating – which is used to ensure that billing-quality meter data are delivered to the billing system.

Middleware is a set of standard software components that manage the integration of the AMI Host with the MDMS and the integration of the MDMS with the "Back Office" Systems.

System Integration is comprised of the professional services for analyzing, designing, building, testing and deploying each phase of the process of integrating the AMI Host, MDMS, Middleware and IT Back Office Systems.

The Smart Meters

Smart meters are the physical smart meter end points that are used to record and store interval usage data and events and communicate that information to the AMI Network. PECO's smart meters have the technological capabilities required by Act 129 and the *Implementation Order*, including bi-directional communication and direct access to, and use of, price and consumption information.

Web Presentment Platform

The **Web Presentment Platform** enables customers to directly access their consumption and pricing data. The web presentment solution will also enable the "Green Button" initiative which will allow customers to securely download their own easy-to-understand energy usage information when it is implemented.

IV. PHASE ONE OF PECO'S SMART METER PLAN

13. Q. What actions did the Company take to implement Phase One of the Smart Meter Plan?

A. PECO has accomplished a variety of Phase One milestones, including: (1) selecting a vendor for, and procuring, each of the smart meter project components described above; (2) testing those components; (3) deploying the AMI System, Communications Network, and IT Systems throughout the service territory before the end of the Commission's grace period; and (4) beginning the initial deployment of the smart meter project by installing over 300,000 smart meters as of the date of this filing.

14. Q. Is there anything you would like to highlight regarding vendor selection?

A. Yes. While a thorough discussion is provided in Section 3 of the Universal Deployment Plan, I would like to briefly address vendor selection and procurement for the AMI Network and smart meters.

PECO engaged in a careful and thorough process to select its AMI Network vendor. After an exhaustive information gathering effort, including a series of workshops with AMI vendors, PECO implemented a detailed Request for Proposals ("RFP") and evaluated participating vendors using a variety of technical, commercial, risk and financial health criteria. Many of the technical criteria were driven by Act 129 requirements. For example, Act 129 requires EDCs to furnish smart meters to customers at their request, regardless of whether that request is in accordance with the EDC's meter deployment schedule. Of the two possible types of AMI Networks

(mesh and point-to-point), the Company decided to procure and install a point-to-point network that can better accommodate ad hoc requests for the installation of smart meters. After considering three finalists from the RFP process, Sensus was selected as the preferred vendor to provide a point-to-point AMI Network, with the ability to accommodate individual customer requests for smart meters prior to full-scale deployment in their areas.

15. Q. How were the smart meters procured?

A. Although Sensus was selected as PECO's AMI network vendor, PECO adopted a policy of trying to obtain more than one source of metering technology in order to mitigate possible supply risks. Consistent with this procurement strategy, PECO tested four different suppliers' meters (Sensus, Landis+Gyr ("L+G"), Elster Solutions, LLC, and General Electric) to identify meters that would be compatible with the Sensus AMI System and that could meet the functionality requirements of Act 129 and the *Implementation Order*. After this testing was completed, PECO decided to obtain its first 600,000 smart meters from two sources, namely, Sensus and L+G. However, the sourcing of smart meters has since changed because of the meter events described below and in Section 3.1.1 of the Universal Deployment Plan.

16. Q. How did PECO test the components of the smart meter project?

A. The underlying technologies (AMI System, Communications Network, and IT Systems) were tested to ensure they could be successfully integrated and that they exhibited appropriate performance characteristics. This was done through a sequence of acceptance tests of escalating rigor conducted in both urban and suburban test

environments. These tests focused on ensuring the functionality of installation tools, deployment processes, system interfaces, billing procedures and meter accuracy. Although implementation and testing of these technologies was successful, it is important to note that several of these systems will continue to be modified, upgraded or enhanced as Phase One and Phase Two progress to completion.

PECO began testing smart meters at its Berwyn Meter Shop in September 2010. The Berwyn site includes an indoor laboratory for shop testing, first article testing and accuracy testing and an outdoor space for functional testing of the capabilities required by Act 129 (e.g., remote connection and disconnection). In mid to late 2011, PECO expanded its accuracy and functionality testing by deploying a limited number of meters (150) in controlled suburban and urban test environments. This testing has shown that the Company's network and meter capabilities are meeting Act 129's functional requirements. Finally, from December 2011 through February 2012, PECO installed an additional 1,800 meters on customer and employee premises in order to test installation and billing processes, network performance and customer acceptance. In addition, PECO participated in a "Performance Evaluation of Integral Disconnect Switches for Single-Phase Revenue Meters" hosted by the National Electric Energy Testing Research and Applications Center ("NEETRAC") in May 2010. This testing is described in Section 3.1.2 of the Universal Deployment Plan.

PECO is in the early stages of testing its Web Presentment Platform.

17. Q. What did PECO do after successfully testing the underlying technologies and smart meters?

A. In March of 2012, the Company began to install smart meters in greater numbers. As the number of deployed meters increased in the spring and early summer of 2012, however, PECO experienced a number of meter events that began to raise safety concerns.

18. Q. What actions did the Company take in response to these meter events?

A. Because customer and employee safety is a top priority for PECO, among other things, the Company temporarily suspended the installation of smart meters to additional customers and initiated testing by respected independent testing laboratories of vendors' meters as part of its efforts to identify the cause(s) of the meter events and to assure the safety of the meters it would install in the future. In that regard, PECO retained Underwriters' Laboratory ("UL") to test L+G meters and, based on that testing, UL concluded that L+G meters were safe for consumer use. Ultimately, the Company decided to replace all installed Sensus meters with L+G meters. PECO resumed the installation of smart meters to new customers as of November 19, 2012, using L+G meters. Even though Sensus meters are not currently being installed, Sensus remains a potential meter supplier subject to PECO's independent testing requirements for any meter product.

19. Q. Given the meter events you have described and PECO's response to those events, when does PECO now project that the Phase One deployment will be completed?

A. As of this filing, PECO has installed over 300,000 smart meters at customer premises. Notwithstanding the meter events that resulted in the temporary suspension of deployment and the replacement of existing Sensus smart meters, PECO expects to complete the installation of 600,000 smart meters by June 2013.

20. Q. Finally, have stakeholders been involved in the Phase One implementation?

A. Yes. Consistent with PECO's practice and its commitments in the Settlement of its Phase One proceeding, the Company has managed a productive and robust stakeholder collaborative process. To date, PECO has held fourteen collaborative meetings with stakeholders to review the overall progress of the Smart Meter Plan, discuss key issues, and share next steps. Appendix B to the Universal Deployment Plan provides additional detail on each collaborative meeting.

V. UNIVERSAL DEPLOYMENT

21. Q. In its original Smart Meter Plan, PECO proposed to complete the universal deployment of smart meters within ten years of the Commission's approval of the plan. Is the Company proposing any changes to that deployment timeframe?

A. Yes. PECO is proposing to substantially complete the deployment of smart meters across its entire service territory by the end of 2014. To accomplish this acceleration,

the Company will procure and install approximately 1.2 million smart meters between the second quarter of 2013 and the end of 2014.

22. Q. Why is the Company proposing to accelerate its universal deployment of smart meters?

A. The Company compared the costs and benefits of: (1) deploying substantially all smart meters more or less proportionately over a ten-year deployment plan ending in 2019, as had been proposed for Phase Two in PECO's initial Smart Meter Plan; to (2) the costs and benefits of deploying substantially all smart meters by the end of 2014. The 2014 end date is significant to the cost-benefit analysis for reasons I will explain later. The results of PECO's cost-benefit comparison are set forth in PECO Exhibit MJT-1,[2] which is sponsored by Mr. Trzaska and explained in Mr. Trzaska's direct testimony (PECO Statement No. 2). That analysis shows that deploying substantially all smart meters by the end of 2014 will provide a net present value benefit to customers vis-a-vis the 2019 deployment scenario of approximately $58 million when costs and benefits are discounted to 2012.

By way of background, it is important to note that, by the end of the grace period, PECO had made substantially all of the investments in its AMI System, Communications Network and IT Systems that are necessary to support smart meter functions and, in fact, as I previously noted, over 300,000 smart meters are already in place at customers' premises. Accordingly, the analysis of alternative Phase Two deployment plans focused on the costs and benefits of installing approximately 1.2

[2] The cost-benefit analysis set forth in PECO Exhibit MJT-1 is also provided as Appendix C to the Universal Deployment Plan.

million smart meters at customers' premises sooner (by the end of 2014) rather than later (by the end of 2019). Stated another way, over 50% of the investment for the smart meter project will have been made by the end of Phase One, and the additional investment, consisting largely of the smart meters themselves, is the last major element of the project needed to bring fully functioning smart meter capabilities to all of PECO's customers.

As shown on PECO Exhibit MJT-1, the single largest benefit to customers from early deployment is to enable PECO to cease paying fees to L+G for services that company is providing to operate PECO's existing AMR system. The second largest benefit is derived from the lower costs PECO will incur to acquire and install smart meters under the shorter deployment schedule. PECO will achieve economies of scale by making larger bulk purchases of meters, as a shorter deployment schedule will accommodate, and will avoid future increases in the unit price of meters that will occur over the five additional years of a deployment plan ending in 2019. Additionally, more rapid deployment will create synergies in the installation process, which will also reduce costs. The third largest benefit is the greater operational savings PECO will achieve by early deployment of smart meters. The elements of these savings are discussed in greater detail by Mr. Trzaska. Finally, societal benefits will be achieved, which are also discussed by Mr. Trzaska.

23. Q. What additions to PECO's existing smart meter project are needed to support accelerated universal deployment?

A. The only notable addition is an accelerated build-up of existing IT infrastructure to manage the expanded number of electric meter reads and the business integration requirements. This build up would have occurred under the original deployment scenario (though at a later time) and is not expected to have a significant impact on total IT costs.

24. Q. Is the Company confident that it will be able to replace all existing AMR meters with smart meters by the end of 2014?

A. PECO expects to be able to replace substantially all of its existing meters within that timeframe. However, there no doubt will be a small number of "difficult-to-access" meters that the Company will not be able to convert before the end of 2014. These meters will be replaced with smart meters in an efficient and safe manner following all current practices for acquiring access to those meter sites. In addition, some existing commercial and industrial meters already have many of the required smart meter capabilities but use a separate technology. These will be replaced with smart meters after Phase Two is completed.

25. Q. What notice will customers receive before their smart meters are installed?

A. Consistent with the Company's practice during Phase One, customers will receive two letters and a telephone call beginning about six weeks prior to receiving a smart meter. The general nature and content of these communications are discussed in Section 6.1 of the Smart Meter Universal Deployment Plan (PECO Exhibit 1).

26. Q. What information will customers receive about the functions their meter can perform?

A. A summary of the information PECO will furnish to customers about smart meter functions is provided in Section 6.1 of the Smart Meter Universal Deployment Plan.

27. Q. How will stakeholders be involved in universal deployment?

A. PECO intends to continue the stakeholder collaborative meetings that were so successful during Phase One. In fact, during the most recent meeting in October, 2012, the Company provided an overview of its proposed Universal Deployment Plan.

VI. CYBER SECURITY AND DATA PRIVACY

28. Q. What is cyber security as it relates to PECO's Smart Meter Plan?

A. Cyber security encompasses the identification, implementation and management of appropriate controls to ensure the confidentiality, integrity and availability of the entire smart meter project.

29. Q. What is the Company doing to protect its smart meter project?

A. During Phase One, PECO performed an initial security assessment, which evaluated the underlying smart meter infrastructure and controls (e.g., physical security of field network elements and encryption ability). As a result of that initial assessment, and in concert with the Company's cyber security plan under its DOE SGIG Program, PECO has implemented a layered security strategy, incorporating physical, platform,

network, application and process controls. Company personnel have been trained in incident management and event monitoring processes and PECO has implemented a "Command Center" for smart meter operational support. Together, these controls will allow the Company to mitigate, detect and remediate threats to the entire smart meter infrastructure. However, the Company plans to continue performing security assessments in order to evaluate existing security plans and identify improvements. Additional detail on cyber security is provided in Section 6.2 of the Universal Deployment Plan.

30. Q. Has the Company addressed data privacy as part of its Smart Meter Plan?

A. Yes, data privacy is a key concern for PECO and was a consideration in the design of the Company's entire smart meter project. First, no customer-identifying information, such as customers' addresses, will be stored in the smart meters or communicated across the AMI Network. Second, the energy usage data collected by smart meters will be encrypted and protected using the same methods as online banking and ATM machines. Finally, collected data will be transmitted to PECO via a secure network. As discussed above, the entire smart meter infrastructure is protected by the Company's layered cyber security strategy.

It is important to note that PECO has met with, and will continue to meet with, interested stakeholders to discuss the safeguarding of smart meter data. Some of the key issues under discussion include customer education regarding privacy rights, customer consent procedures, and protecting victims of domestic violence and other related crimes. If the Commission were to decide that a more formal process might

be called for, the Company suggests that the Commission consider initiating a statewide proceeding to examine these and other issues surrounding smart meter data security and privacy.

VII. COST RECOVERY FOR METER EVENT MITIGATION

31. Q. Mr. Innocenzo, is PECO seeking to recover in this proceeding any costs that were incurred as a result of the meter events described earlier in your testimony and PECO's response to those events?

A. PECO is not seeking to recover in this proceeding the costs it incurred to purchase and install Sensus meters. To date, PECO has purchased approximately 320,000 Sensus meters and has incurred installation costs (including removal costs for existing meters) for approximately 186,000 of those meters. PECO is deferring the foregoing costs while it works to resolve issues related to cost responsibility with its meter vendor. When a resolution acceptable to PECO has been achieved, PECO will seek Commission approval to fully recover any remaining deferred costs through its currently authorized Smart Meter Cost Recovery Surcharge. Any recovery by PECO from its meter vendor and any reimbursement from the DOE will be credited against the costs that PECO is deferring. In any event, PECO will not seek a return on the deferred meter event costs.

VIII. CONCLUSION

32. Q. Does this conclude your direct testimony?

A. Yes.

In addition, PECO's repeated violations of law, false statements, witness tampering (e.g. coaching of a witness during sworn testimony) and the submission of documents with fictitious, altered and or false information should be deemed irreprehensible by this Honorable Commission and thereby entitle the Complainant to a ruling in his favor.

Furthermore, PECO's unlawful tactics and repeated attempts to flout the rules and or laws of this Commonwealth should not be tolerated and may also require both criminal action against PECO and disciplinary action against PECO's Counsel to be sought.

II. SUMMARY

In or before 2010 the Complainant became aware of irregularities with the kWh usage that appeared on his PECO account. The Complainant backtracked and monitored the ongoing irregularities for several months. In July 2011 the Complainant notified PECO of the irregularities with the kWh usage that appeared on the billing statement for his account.

On August 24, 2011, as per an agreed upon scheduled visit, a PECO meter technician arrived at the Complainant's home and performed a complete passing load test and appliance verification. This process was referred to as a field test. PECO found no errors and concluded their investigation. Remarkably, after the technicians visit and given the fact that none of the dynamics of the Complainant's residence had changed, (i.e. the occupants remained at one and no electrical appliances were removed or taken out of operation) the Complainant immediately noticed a clear and indisputable reduction in the kWh usage being assigned to his account. The Complainant compared prior year usage to current year usage of a similar time period. (e.g. 9/11/10 – 10/10/10 usage was reported by PECO as 378 kWh while 9/11/11 – 10/10/11 usage was reported as 166 kWh) This constitutes a 127 % reduction in kWh usage. In addition, PECO reported the average daily temperature for the period 9/11/10 – 10/10/10 as 68 degrees, while 9/11/11 – 10/10/11 the average daily temperature was recorded as 66 degrees. In light of the aforementioned facts, its PECO's position that less kWh were used in 2011 although the outside temperature was lower than in 2010. But neither period shows usage equal to the use of an electrical heating device.

(Note: Documented evidence will show that gas was not being used to heat the Complainant's residence in 2010 or 2011 respectively. Complainant has vowed that he has heated his home with kerosene heaters prior to 2010)

Unfortunately the Complainant soon realized that the perceived correction to the problem of erroneously assigned kWh usage was short lived as the irregularities of erroneous kWh usage began to gradually reappear. The Complainant continued to track the erroneously assigned kWh usage over the next 4 years. On March 18, 2015 a formal complaint was filed. PECO responded timely to the complaint but subsequently submitted a Motion for a Continuance which contained false statements in regards to PECO's attempts to contact the Complainant as well as false statements as to the availability of PECO witnesses. *(See docket entry - Motion for Continuance of Hearing Date – PECO; 22-May-2015 page 2: item 3 & 4, page 3: item 8 and page 4)*

On June 3, 2015 the Complainant filed a Motion to Sanction PECO siting the false statements made in PECO's Motion for a Continuance in which documented evidence was provided by the Complainant that irrefutably proved PECO's statements to be false. *(See docket entry - Motion for Sanctions - Deree Norman; 11-Jun-2015 exhibits 1, 2, 3 and 6).* The Motion to Sanction was denied by the commission by and through the Honorable Mary D. Long who concluded that PECO by and through its counsel did not make false statements but simply misspoke. No action was taken against PECO for the false statements.

Question:

In light of the fact that Shawane Lee Esq. is the Assistant General Counsel for the Exelon Corporation and has represented PECO since April 2011. In conjunction with her noted accomplishments, (e.g. Judicial Law Clerk in the Philadelphia Court of Common Pleas for the Hon. Marlene F. Lachman, Temple Law School – Outstanding Oral Appellate Advocate and Litigation Associate for Weber, Gallagher, Simpson, Stapleton, Fires & Newby, LLP) is it **unlikely** that this very precise and accomplished attorney would include to her repertoire an episode of misspeaking and or a misstatement in relation to any factual information, which could be subject to verification, included in a Motion she submits on PECO's behalf of which she signed a statement of verification?

Suggested Answer: Yes, very unlikely.

PECO's Motion for a Continuance was granted. After rescheduling the original telephonic hearing scheduled for June 29, 2015, PECO issued a 10-Day Shut off Notice dated July 22, 2015. This was received by the Complainant on or around July 24, 2015.

Prior to and immediately after the issuance of the Shut off Notice, PECO continued to stonewall and or ignore the Complainant's request for a copy of PECO's policies and procedure in relation to having an independent third party conduct an additional and up to date field test.

On August 24, 2015 the Complainant sent a letter to the Honorable Mary D. Long in order to make her aware of the Shut off Notice, PECO's failure to comply with the request for information regarding a third party field test and other unwarranted harassment by PECO. Subsequently the Honorable Mary D. Long expressed her disapproval of the Shut off Notice; however no action was taken against PECO for this notice, for the failure to comply with the Complainant's documented and repeated request or for the harassment. A telephonic hearing was finally set for October 29, 2015 before the Honorable Mary D. Long. The Complainant submitted exhibits in a timely manner in accordance with 52 PA 5 § 5.401 to both PECO and the Honorable Mary D. Long.

During the telephonic hearing the Complainant learned that PECO's witnesses were not supplied with copies of his exhibits yet they were supplied with copies of PECO's revised exhibits that were distributed two days after PECO had received the Complainant's exhibits. In addition, the Complainant was informed that he could not question PECO's Counsel in relation to his exhibits although she acknowledged that they were in her possession. The Complainant was instructed to proceed with his case. As a result of PECO's willful transgression, the Complainant couldn't completely and or adequately conduct the direct examination of PECO's witnesses nor could he introduce viable evidence that would prove his case. PECO's actions presented an unfair, unduly, unreasonably oppressive and or highly prejudicial burden on the Complainant's ability to prove his case.

Question:

Is more likely than not that Shawane Lee Esq. allowed her advocate bias to cause her to make the poor choice of not distributing the Complainant's exhibits to PECO witnesses.

Suggested Answer: Yes, very likely.

Having no other options the Complainant was forced to rest his case. Given the time of day the hearing was adjourned until January 21, 2016 in order to give PECO an opportunity to present its case. During this session PECO committed numerous violations.

III. LEGAL ARGUMENT

A. Standard of Review

Pennsylvania Public Utility Rule 52 Pa. 5 § 5.102 states: after the pleadings are closed, but within a time so that the hearing is not delayed, a party may move for judgment on the pleadings or summary judgment. (c) Motion for summary judgment. A motion for summary judgment must be based on the pleadings and depositions, answers to interrogatories, admissions and supporting affidavits. Documents not already filed with the Commission shall be filed with the motion.

In addition, Pennsylvania Rule of Civil Procedure 8.4(a) holds that it is professional misconduct for a lawyer to violate or attempt to violate the Rules of Professional Conduct; 8.4(b) holds that it is professional misconduct for a lawyer to commit a criminal act that reflects adversely on the lawyer's honesty, trustworthiness or fitness as a lawyer in other respects and 8.4(c) holds that it is professional misconduct for a lawyer to engage in conduct involving dishonesty, fraud, deceit or misrepresentation.

B. Violations of Law

This Honorable Commission should Grant the Complainant's Motion for Summary Judgment for the following reasons:

Count 1: Pursuant to 18 Pa. C. S. § 4910 **(Tampering with or fabricating physical evidence)** which states - A person commits a misdemeanor of the second degree if, believing that an official proceeding or investigation is pending or about to be instituted, he: (1) alters, destroys, conceals or removes any record, document or thing with intent to impair its verity or availability in such proceeding or investigation;

A. Respondent intentionally ***concealed*** the Complainant's exhibits for trial from its own witnesses thereby rendering the ***documents*** submitted as exhibits for trial ***unavailable***.

B. Respondent introduced at trial, (PECO Trial Exhibit 6) a series of ***altered*** entry's depicted as selectively subjective recapitulations of PECO's work records representing the Complainant's contract history. The alleged entries were not a direct download or print out from PECO's system but were an adaptation of incomplete facts and or inaccurate information.

Count 2: Pursuant to 18 Pa. C.S. **§** 4952 **(Intimidation of witnesses or victims) – (i.e. witness tampering)** which states - A person commits an offense if, with the intent to or with the knowledge that his conduct will obstruct, impede, impair, prevent or interfere with the administration of criminal justice: The Crime hear being Fraud as established below. (See Count 3)

A. The Respondent's transgressions identified in Count 1 (A) clearly shows Respondent's intentional omission of the Complainant exhibit for trial as a ploy to prevent the administration of the Complainant's case. This deliberate failure to provide its own witnesses with copies of the Complainant's exhibits directly affected the Complainant's ability to proceed with his case. This undoubtedly created an unfair burden on the Complainant in relation to proving his case. This action is tantamount to witness tampering by way of obstruction, prevention and interference. In light of the fact that the Complainant properly and timely submitted copies of his exhibits for the telephonic hearing to both PECO, addressed to the attention of Shawane Lee Esq., and The Pennsylvania Utility Commission, addressed to the attention of the Honorable Mary D. Long, coupled with PECO's acknowledgement of timely receiving said exhibits, PECO failure to provide its witnesses with copies of the Complainant's exhibits during the telephonic hearing is also a clear and concise violation of the PA Rules of Professional Conduct (See: Count 6; below)

B. In addition, PECO witness Mary McQuilkin was being coached and feed answers by her supervisor Thomas Lerro while giving sworn testimony during phase one of the telephonic hearing, to the extent that the presiding Judge included as an official instruction in phase two of the telephonic hearing that no individual would coach and or influence any witness during their testimony.

(Note: the irreversible damage had been done in the aforesaid hearing, the Complainant was instructed to proceed with direct testimony in spite of the absence of his exhibits. Given, his inability to fully and properly question PECO employee's, the Complainant's was forced to rest his case.

Count 3: Pursuant to Pa. Restatement (Second) Torts § 551(1977) **(Fraudulent Misrepresentation)** which states – A party seeking recovery on a claim of Fraudulent Misrepresentation must show that their reliance was justifiable.

(Note: Sworn testimony is perceived as true and reliable until refuted beyond any reasonable doubt. Therefore any reasonable person would expect the testimony of PECO's witnesses to have been the truth, the whole truth and nothing but the truth. However the evidence will show truthful testimony was not the outcome from PECO witnesses.)

A. *Fraudulent Misrepresentation of Process* **–** Kilowatt Usage Data from Meter to PECO Bill System:

PECO by and through its witness (Richard King) falsely testified that the meter to billing process was a three stage process that consisted of (kilowatt usage data being transferred from the customers meter to a collector box on a pole and then to the billing system). The witness also testified that this process did not include the use of any algorithms due to the fact that the transfer was done by radio frequency. The witness further stated that the averments, (specifically; the manipulation and redistribution of kWh usage data) as document in the complaint regarding this matter were not true**.**

Witness Terresa Ferrier falsely stated that the kWh usage data was transferred from meter directly to billing system.

1. **(Exhibit 1 - page 6: 15 - page 8: 14) - (**PETITION OF PECO ENERGY COMPANY FOR APPROVAL OF ITS SMART METER UNIVERSAL DEPLOYMENT PLAN presented BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION (2013); DIRECT TESTIMONY OF SENIOR VICE PRESIDENT, OPERATIONS, MICHAEL INNOCENZO**)** Mr. Innocenzo's testimony before this Commission clearly shows that the

kWh usage data from meter to PECO's billing system encompasses a much more complex series of events than stated by the witness (King). In addition, Mr. Innocenzo's acknowledgement of the use of computer software (See below - Middleware Software) and computer networks to facilitate this process absolutely confirm the use of algorithms in the kWh usage data to billing procedure.

a. (Middleware Software Reference: See Exhibit 1 page 8: 3)

i. Software - consist of various computer languages that is referred to as code,

ii. Code - is the symbolic arrangements of data and or instructions, these arrangements and or instructions are referred to as algorithms,

iii. Algorithm - is a self-contained step by step set of operations to be performed. Algorithms are used to performed calculations, data processing and automated reasoning. *(included in all software)*

b. (**Exhibit 2**) – (**PECO Billing Process Model**) PECO's billing system model is an algorithm in and of itself)

B. *Fraudulent Misrepresentation of Terminology and Meter Functionality* - AMR and AMI Systems:

PECO by and through its witnesses (Mary McQuilkin and Richard King) falsely stated that the complainant's current meter is an AMR meter in addition to stating that the Complainant's current meter is not a smart meter. Both witnesses further stated that the complainant's current meter did not have the ability of two way communication. As shown below the witnesses testimony is completely rebuffed by the definition of a smart meter, the meter manufactures specifications, as well the testimony of the VP, Operations M. Innocenzo.

1. **(Definition of Smart Meter)** "Smart" Meters are digital utility meters that send customers' detailed usage information to the utility using a radio-frequency transmitter (or over the power lines in the case of Powerline Carrier (PLC) systems. Some meters (AMI mesh networks) also contain other

capabilities, such as remote shut-off. Smart Meters are part of a larger plan to change the electricity grid to a "smart" grid–though there is controversy about whether the customer meter is actually crucial to that change. Electric smart meters are replacing older analog style meters

2. *(See Complainant Trial Exhibit 13)* manufactures specifications of (Itron) Centron Smart Meter

3. *(See Complainant Trial Exhibit14)* Complainant's Actual Smart Meter installed in 2002. As per a most recent field test, Complainant's meter is a fully operational Smart Meter on the new AMI system.

4. *(See Exhibit 1 page 7: 1 - 10)* Shows that the terms AMR and AMI both describe operating systems of which EDC's transmit electricity. AMR stands for Automatic Meter Reader System and AMI stands for Automated Meter Infrastructure System. While the AMR system is a one directional communication system, the AMI system is a two way communication system. The terms AMR and AMI in no way define or describe the functionality of the meter in question. The Complainant's current (Itron) Centron Smart Meter is compatible with both the AMR operating system and AMI operating systems.

5. **(Exhibit 3 page 1: ¶ 7) – (PECO's April 3 2015 Letter)** Confirms the (Itron) Centron Smart Meter can and does transmit and receive data on a daily basis.

6. **(Exhibit 4 page 1: ¶ 3) – (PECO September 2, 2015 Letter with False Identification of Smart Meter)** While the FlexNet - Smart(er) Meter of which PECO wishes to install is compatible only with the AMI system. The FlexNet meter can transmit and receive data every 15 seconds or less. This meter can also be remotely turned on or off from the PECO base station.

7. **(Exhibit 5a page 17 ¶ 1) – (Universal Deployment Plan)**

8. (**Exhibit 5b page 21 - 22) – (PECO Smart Meter Technology Procurement and Installation Plan)** PECO has been testing on an AMI system since the passing of Act 129 in 2008. The evaluation identified in this exhibit 5b at 4.3

could only have be done if both systems were operated parallel to each other. Therefore certain customers would have to have been part of a test group. Historically individuals of less affluent means fall into these type of test groups as they are more than likely to not have the knowledge and resources to affect a counter action. All operations on the AMR system ceased in 2012.

Therefore the activation of the AMI two way communication system in 2010 gave PECO the ability to receive data from and transmit data to the complainant's Centron (Itron) Smart Meter that was installed in 2002.

a. PECO's preemptive replacement of analog meters prior to 2003 shows PECO's premeditated and deliberate intention to commit fraud. From 2000 through 2008 after the first patent relating to AMI technology was filed ***(See US Patent: US6188691 – March 16, 1998),*** PECO replaced all analog meters with (Itron) Centron Smart Meters in anticipation of future approval and implementation of an AMI system (New Technology). (Itron) Centron formerly known as Schlumberger Centron *(See Exhibit 1 page 18: foot note 6). In addition to the introduction of* smart meter patents for two way communication ***(See US5239575 - July 9, 1991)*** and ***(See US Patent US6529883 - August 20, 1999).*** (Itron) Centron Smart Meters are combatable with both the AMR and AMI systems. PECO strategically convinced law makers and the Utility Commission in 2008 that the AMI two way communication system would allow PECO to only better serve its customers.

b. **(Exhibit 6) – (Excerpt from PECO Electric Service Requirements Manual, or the "Blue Book." – page 3 item 2.7)** shows PECO attempted to conceal in plain sight details of its ability and or intention to manipulate kWh usage amounts per house hold. This tiny blurb on this single publicly accessible document clearly shows that PECO took a covert and calculated attempt to conceal its abilities and true intentions However, when PECO's witnesses testified that the possibility of this type of kWh manipulation did not exist, after a direct question posed by PECO's attorney in relation to the exact averment which led to the

witness denying the possibility of this action, PECO's by and through its witness committed fraud.

i. In 2009 After AMI system approval PECO received a $200,000,000.00 grant to cover the cost of the implementation of the more advanced AMI system as well as the purchase of the FlexNet Smart(er) Meters, PECO is having the cost of this project passed onto its customers in the form of a surcharge that has no definitive ending date. PECO customers could be required to pay for this project while being fleeced by way of erroneous kWh usage manipulation well past 2023 when the full development of the smart meter project is scheduled for completion.

Note: PECO never instituted an identifiable surcharge for the replacement of analog to (Itron) Centron Smart Meters. The cost for this preemptive action is most likely hidden in PECO's balance sheet as a miscellaneous tax deductible expense. (See Exhibit 5b page 18 – 20)

C. Fraudulent Misrepresentation of Material Facts – Nation Average of Kilowatt Usage, Historical Weather Data and Billing

PECO by and through its witness (McQuilkin) falsely stated that PECO's exhibit 10 page 2 and exhibit 12 page 2 were recapitulations of the National Average Kilowatt usage for this market. In addition PECO witness (McQuilkin) documented that the Complainant would incur an estimated ongoing increase (e.g. 240) in kilowatt usage due to the installation of a gas heating system. (See PECO exhibit 12 page 2)

1. **National Avereage kWh Usage**

a. **(Exhibit 7) – (Verifiable National kWh Usage; Source US.Gov)**

b. (See PECO trial exhibits 10:2 and 12:2 - Fictitious National Average kWh Depictions) this document show PECO's valuation of the National Average of Kilowatt Usage to be a complete and utter fabrication.

c. **(Exhibit 8) – (Summary and Bills)** show's Complainant consistently used his home heating system for two billing periods and kilowatt usage went down although by PECO standards kWh usage should increase.

i. Complainant gas boiler, which was illegally photographed by PECO witness (Lerro), does not have a furnace fan as falsely testified to by PECO witness (See PECO trial exhibits 10:2 and 12:2) therefore Complainant's gas boiler will not generate kWh usage.

2. Historical Weather Data

a. Respondent referred daily average temperature data on monthly bills from an unverifiable source identified only as the company.

i. In light of the fact that PECO witness (King) stated that PECO has 21 different billing cycles that do not start on the first day of any given month or end on the last day of said month weather data obtained from "The Company" would have to accommodate 21 different weather cycles to accurately identify the correct average daily temperature per billing cycle.

ii. PECO has not produce proof of 21 billing cycles

iii. PECO has not produce the name of "The Company" nor its source of information

Note: Complainant submission of historical weather data from WeatherSpark.com which was a compilation of data from The National Oceanic and Atmospheric Administration. This data was denied entry into these proceedings Note: the source of the historical weather data that was obtained comes from Weather.gov: which serves up both historical data for the world and forecasts for the United States.

3. Bill Errors

a. **(Exhibit 9) - (Erroneous billing)** PECO is also in violation of 52 PA 56 § 56.2 in relation to a "Billing Month" as defined as – A period of not less than 26 days and not more than 35 days the exceptions provided under § 56.2 do not apply in this matter. PECO by and through its counsel is in violation of 18 Pa. C.S. §4904 relating to the false statements in PECO's Motion for a Continuance

D. Fraudulent **Concealment**

Count 4: Pursuant to 18 Pa. C. S. § 4107 **(Deceptive or fraudulent business practices)** which states - A person commits an offense if, in the course of business, 2) sells, offers or exposes for sale, or delivers less than the represented quantity of any commodity or service; (4) sells, offers or exposes for sale adulterated or mislabeled commodities. As used in this paragraph, the term "adulterated" means varying from the standard of composition or quality prescribed by or pursuant to any statute providing criminal penalties for such variance or set by established commercial usage.

A. In light of the fact that Respondent has clearly altered the kWh usage data obtained from the Complainant's meter and subsequently billed the Complainant for the fictitious kWh usage, the Complainant did not receive the amount of electricity that was recorded as sold to him, thereby enacting 18 Pa. C. S. § 4107

Count 5: Pursuant to 18 Pa. C. S. § 4902 **(Perjury)** which states - A person is guilty of perjury, a felony of the third degree, if in any official proceeding he makes a false statement under oath or equivalent affirmation, or swears or affirms the truth of a statement previously made, when the statement is material and he does not believe it to be true. (b) Materiality Falsification is material, regardless of the admissibility of the statement under rules of evidence, if it could have affected the course or outcome of the proceeding. It is no defense that the declarant mistakenly believed the falsification to be immaterial. Whether a falsification is material in a given factual situation is a question of law. (e) Inconsistent statements. Where the defendant made inconsistent statements under oath or equivalent affirmation, both having been made within the period of the statute of limitations, the prosecution may proceed by setting forth the inconsistent statements in a single count alleging in the alternative that one or the other was false and not believed by the defendant.

In such case it shall not be necessary for the prosecution to prove which statement was false but only that one or the other was false and not believed by the defendant to be true.

A. In accordance to 18 Pa. C. S. § 4902(b) Witness (King) falsely stated that algorithms were not used in the process of kWh usage date being transferred from the Complainant's meter to PECO's billing system.

B. In accordance to 18 Pa. C. S. § 4902(e) Witness (McQuilkin) inconsistently testified about the completion of a field test of the Complainant's meter on August 24, 2011.

    a. Witness McQuilkin testified that she tested the Complainant's meter before she did an appliance verification.

        i. Appliance verification requires access to the Complainant's entire residence (e.g. all bedrooms, bathrooms, living room dining room, kitchen, basement and backyard.

    b. Witness McQuilkin testified she tested the meter but not completely.

    c. Witness McQuilkin stated that she did not complete a field test because Complainant refused to allow the testing of the meter.

        i. Complainant did not have the knowledge to determine what type of test PECO's technician was running therefore could not decline a test PECO said they completed.

        ii. Complainant initiated the requested for PECO to test the Meter.

    d. Witness McQuilkin stated that she did not complete a field test because she determined it unnecessary after Complainant acknowledged he did not believe the meter had any problems.

Count 6: Pursuant to 204 Pa. Code § 81.4 Pa. R. P. C. § 8.4 **(Misconduct)**

A. In accordance with 81.4 Pa. R. P. C. § 8.4(a) PECO's attorney deliberately engaged her own witnesses to answer question in relation to information that she knew they would answer falsely or were not qualified to answer.

1. Witnesses were asked if algorithms are used in the kWh usage data to billing process. The witness falsely stated no algorithms were used.
2. Witnesses were asked if Complainant had a Smart Meter. The witnesses falsely stated that Complainant meter was not a Smart meter

i. See Exhibit 1 page 6: 15 – 8: 14

a. By these facts and given the time PECO's attorney had to depose her own witnesses PECO's attorney knowingly suborned perjury. Also see Federal Rules (18 U.S. Code § 1512 (c)(1) and (d)(1) and a violation of State Rules (See: 18 Pa. C.S.A. §4911(a)(1)(2) and (3)).

Count 7: **Pusuant to 18 Pa. C. S. § 75** PECO by and through its representative witness (Thomas Lerro) violated the Complainant's right to privacy - specifically under the special provision referring to Intrusion upon Seclusion for the following reasons:

A. By taking unauthorized photographs of the interior of the Complainants property without his written, expressed and or implied consent.

1. The unauthorized act would be deemed offensive to any reasonable person.

2. An employee of PECO cannot intrude upon a private matter between PECO and a Customer and or Complainant.

3. The aforesaid violations of privacy caused the Complainant, who has been under a doctor's care for depression, extreme mental distress.

IV. CONCLUSION

At every level of our judicial system; be it criminal, civil, before a tribunal and or a Commission, credibility is the cornerstone and key most factor in the pursuit of justice. This credibility extends to witnesses, witness testimony, evidence, and the ethical, professional and legal actions of attorney's representing any party and or any self-representing individual(s) as well as the intentions of the attorney's representing any party and or intentions of any self-representing individual(s)

In this case, Respondent PECO's has repeatedly compromised its credibility. Its diversionary tactics, blatant violations of rule and laws as well as the deliberate misrepresentation of facts should have an impact on this Honorable commission. Moreover, the fact that PECO is so highly regarded, this Honorable Commission should not be dissuaded from opening Pandora's box, expositing this malfeasance and rule in favor of the Complainant in relation to the facts as they are. PECO's non-factual and speculative explanation in response to the averments of this complaint are without merit, substance or even the inkling of common sense.

PECO by and through its Attorney and or witnesses: made false statement to this Commission made an unfathomable attempt to introduce irrelevant evidence from an unrelated hearing with another utility company, testified falsely to information they had no knowledge of or were not qualified to answer. PECO's by and through its employee violated the law in regards to privacy.

Unfortunately, this is not an isolated incident, these fraudulent and deceptive practices affect all of PECO's customers. All too often, these type of transgression go without reprimand or the ones that are reprimanded have existed for so long that the damage is virtually irreversible.

Moreover, we live in a society that operates on the principle of profits over people. This concept has been so widely adopted by individuals in positions of power, Corporations and even Governmental agency's (e.g. Bernie Madoff's - Ponzi scheme of which he cheated people out of hundreds of million, Volkswagen's - manipulation of the vehicle computer system to cover an issue rather than incur the cost to fix the product before distribution and the Governing body of Flint MI - the incorporation of a cheaper lessor quality (deadly) source for water of which the customers were being charged the same price) it's the private citizen that suffers. In all these instances the warnings brought to the attention of authorities

prior to the irreversible damage to people went without reproach or were ignored completely.

In this case, the facts of erroneous kWh usage established by the Complainant that completely contradict the Respondent's position in conjunction with the numerous violations of the law as well as the violation of the rules of professional conduct during these preceding, one must ask themselves.

Question:

Is the Exelon Corporation above deceiving the public in order to maximize profits?

Suggested answer: No, absolutely not

V. RELEIF

For the foregoing reasons wherefore, the Pro Se Complainant, Deree J. Norman respectfully requests and prays this Honorable Commission grant his Motion for Summary Judgment. The Complainant's account balance as of January 1, 2010 should be set to zero. All bills from January through May and September through December between 2010 to current should be recalculated showing usage at 65 kWh per month. All bills from June through August between 2010 to current should be recalculated showing usage at 91 kWh per month. All LIHEP payments should be credited and or reapplied against new calculations. All payments made by Complainant should be credited and or reapplied against new calculations. All late charges should be dismissed. All on going charges should follow the criteria established above unless or until PECO can provide irrefutable proof to the contrary in a law suit filed by PECO or on appeal in this matter. Lastly, given the fact that a private citizen cannot file criminal charges of perjury, the Complainant respectfully request that this Honorable Commission file Counts 1 through 5 on his behalf with the District Attorney of Philadelphia.

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March 14, 2016

Respectfully submitted,

By: /s/ Deree J. Norman
Deree J. Norman

EXHIBIT 2

Exelon

Process Narrative: *System Billing (Meter to Cash)*

Process Overview:

Start of Process:	Meter Reading Data is uploaded to CIMS.
End of Process:	Billing data is sent to Bill Printing for distribution to customers.

Walkthrough Participants:

Name & Title	Date of Walkthrough
Richard W King (RK), Manager Billing (PECO)	May 21, 2015
Steven Baskin (SB), Associate Business Analyst (PECO)	May 21, 2015
Vadim Molchansky (VM), Sr. Supervisor Customer Service (PECO)	May 21, 2015
Qiong Lin (QL), Senior Business Analyst, Self-Assessor (PECO)	May 21, 2015

Process Synopsis

The System Billing process describes the process for which PECO meter data is stored and bills are generated through CIMS and system billing clerks.

Key Systems Overview

Key systems used in the Corporate Reporting process are:

- **EPS**: General Ledger housing company financial data
- **CIMS**: Stores reformatted period actual usage and measures actual usage
- **Billing Tracking:** Billing system that tracks all service orders from after a WFM is generate
- **CEDAR:** Batch system; All meter reads interface through CEDAR into CIMS
- **MDM:** Data Validation system currently under review

System Billing Process

The system billing process begins when meter reading data is uploaded to CIMS. All meter data is also loaded and stored in CEDAR except for Large Gas Commercial customers.

UCC821 - CIMS runs a pre-bill validation on all bills. If a bill does not pass the pre-bill validation, a (Work Flow Manager) WFM is created and routed to the Tracker.

Prior to any accounts being billed, the CIMS system automatically runs several validations to determine if there are any problems with an account. If an account passes the validations, then it will bill as normal, if an account fails a validation then the bill will not be billed and a Work Flow Management (WFM) is created for follow-up. (KFC UCC821)

If the bill doesn't pass pre-bill validation then a WFM is generated and sent to Tracker for all Service Orders. Billing data is then sent to the billing tracker system. Per U310, daily management reviews the results of the System Billing Daily No Bill report that identifies unbilled and delayed accounts.

MDM- MDM is a pre-bill validation system that is currently under review. MDM collects data, validates it, and sends it to CIMS. Any accounts that are phased into MDM are excluded from CIMs data checks because the checks are done in MDM.

U310 - Daily, Management reviews results of the No Bill report that identifies unbilled & delayed accounts.

Daily, System Billing compiles the "All Delayed Accounts" report, which is a summary of all delayed bills. This report details the number of delayed bill accounts and their associated dollar values from CIMS as well as the current inflow of new accounts and comparisons to prior day. The e-mail that is sent out to all System Billing contacts daily was obtained as part of the walkthrough process. When the variance from day to day is greater than $1.5 M a discussion will be held to understand and resolve the variance. Each day, the delayed bills are pulled by Billing Specialists into their System Billing Tracker program and they are to work as many of the delayed bills as they can and get as many of those accounts billed as possible. If necessary during the day, a meeting is held with all billing supervisors and above to discuss the daily progress made on the delayed accounts (KFC U310).

If there is a bill failure the tracker routes the bill to an adjuster. System billing clerks research why the account did not bill properly if the bill is non-routine. If the clerk can resolved the issue then the system billing clerk makes corrections. If the system billing clerk can't make corrections then the system billing clerk creates field orders and resolves failed bills once the field order is closed.

After issues with the non-routine bill have been resolved then the corrected bill data is manually input in CIMS. If a bill has a WFM generated, it is sent to the tracker, and there is not a bill failure then CIMS can identify; Review Bills, Consolidated Bills, IPP Bills, and Pull Bills, etc. An adjuster will then calculate the bill based on special contract terms, rates, riders, and other factors. The adjuster will cancel or rebills if required to.

U311 - On a monthly basis, System Billing selects a sample of three bills each month to be reviewed in detail.

At PECO, there are certain customers that have specially negotiated contract rates/riders or other pricing that the CIMS system is unable to process. This type of customers' bills must be manually calculated. The Billing department places these account on a 'permanent pull bill' so the initial CIMS bill does not reach the customer. For those that require manual billing a bill model / spreadsheet is used to produce the customer's monthly bill (true bill) and a miscellaneous debit / credit is posted to CIMS to make the necessary adjustment based on the customers contract (specific rate/rider). Once they are set up in the system as a manually billed customer, they are tracked as such and the customer is billed manually going forward.

In conjunction with the monthly review of system billing adjustments, 3 manual bills are reviewed each month. A tracking spreadsheet is used to account for all bills that are manually billed and when they are reviewed (KFC U311).

All bills that generate a WFM and are sent to the tracker will eventually have the corrected bill manually input to CIMS per, U312.

U312 - Monthly, Billing Supervisor audits all billing adjustments over $50k, 1 per biller under $50k, and a sample of non-System Billing adjustments to ensure that they are valid, accurate & authorized. Additional Director review is performed for all adjustments over $500k.

IT prepares a report once a month that is a data dump of all billing adjustments processed during the month.

1. System Billing Supervisor, confirmed that each month System Billing Supervisors audit all billing adjustment transactions netting over $50K, one bill adjustment per billing clerk, under $50K, and 4 adjustments processed in other departments.
2. In addition, the System Billing Supervisor will audit on a monthly basis, billing adjustment transactions with a gross amount = or > $50k (either a credit or debit gross amount) and transactions netting > $50k.A System Billing Supervisor selects the adjustments for testing and imports the adjustments into a database used to perform the monthly review.
3. For transactions > $500k, a Director will review and verify the bill.

All parties involved in the bill adjustment review process are notified of when the adjustments selected for testing are loaded into the database and are provided a copy of the bill adjustments selected for testing. See files attached below for a copy of the monthly file received from IT and list of selections for review (KFC U312).

If the bill has passed pre-bill validation but is unable to be processed then CIMS systematically cancel/rebill customer based on parameters in CIMS.

If the bill has passed pre-bill validation and the bill can be processed then CIMS automatically estimates customer accounts that met criteria for automatic bill estimation for no read or other criteria when automatic meters are unable to read CIMS accounts for a particular route, per U825.

U825 – CIMS automatically estimates customer accounts that meet criteria for automatic bill estimation for no read or other criteria when readings are unable to be obtained for CIMS accounts for a particular billing route.

Each month CIMS will generate an estimate for each account. At the end of the billing window (day 4 or the cut-off date), if a reading from the field did not come in, then the account will bill on the estimate. If there is a valid reading from the field, the estimate is discarded and the actual reading is billed **(KFC U825).**

Automated journal entries are then posted to EPS and billing data is sent to Bill Printing for distribution to customers.

Walkthrough Conclusion

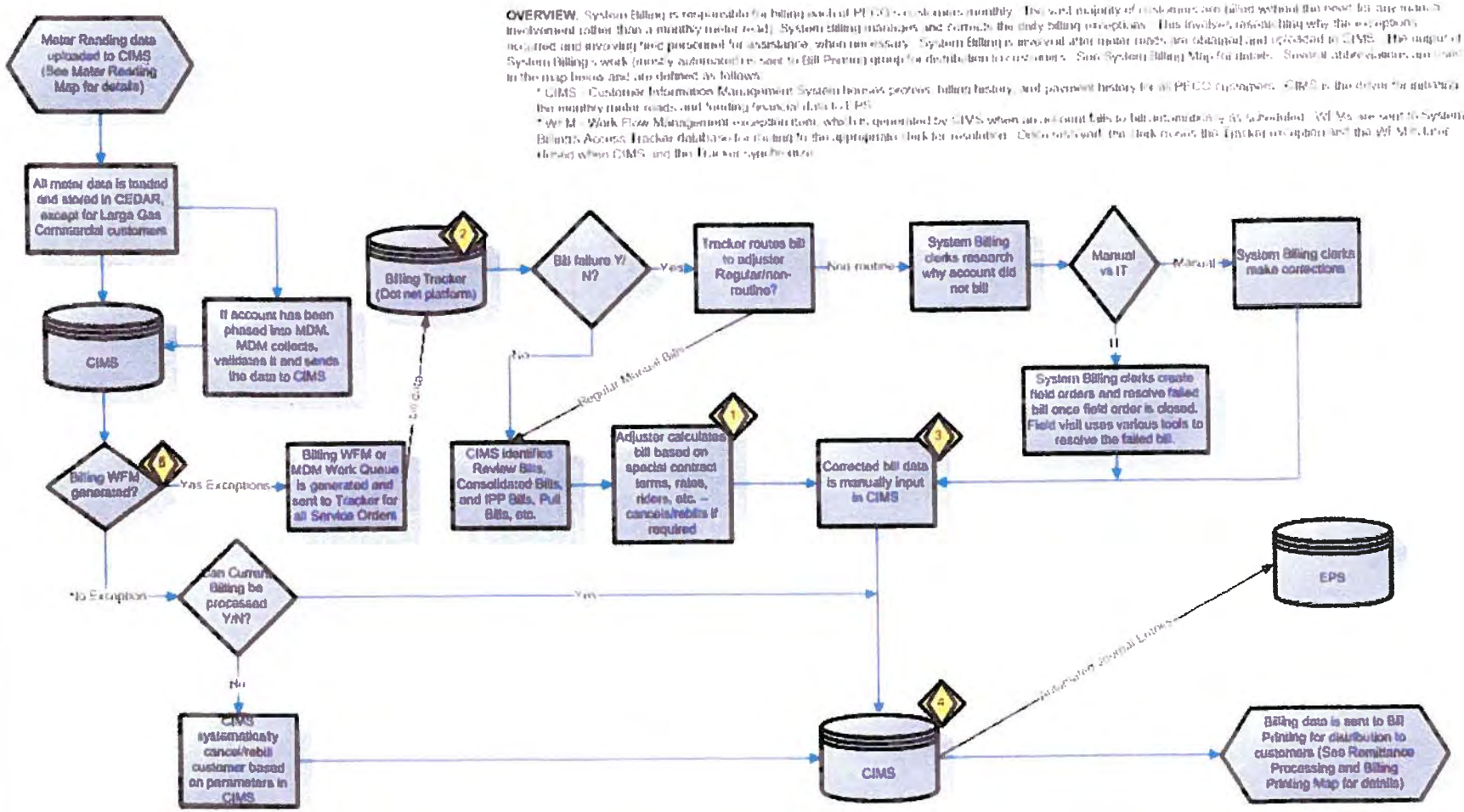
Through inquiry of key personnel, observation and re-performance FCG has obtained an understanding of the KFCs included in the process and how the KFCs mitigate the financial control risks. Additionally, FCG has documented a walkthrough (test of one) for each KFC to determine adequate design of the KFC (stored by control in the Internal Control Enforcer tool).

FCG Sign-offs

Role	Name	Date
Preparer	Xiaoting Shen	June 1, 2015
Reviewer	Savana Latimore	June 10, 2015

PECO Meter to Cash - System Billing

PECO Meter to Cash - System Billing



OVERVIEW. System Billing is responsible for billing each of PECO's customers monthly. The vast majority of customers are billed without the need for any manual involvement rather than a monthly meter read. System billing manages and corrects the only billing exceptions. This involves researching why the exceptions occurred and applying the personnel or assistance when necessary. System Billing is assured after meter reads are obtained and uploaded to CIMS. The output of System Billing's work (newly authorized bills sent to Bill Printing) results in distribution to customers. See System Billing Map for details. Several abbreviations are used in the map boxes and are defined as follows:

- CIMS – Customer Information Management System houses account billing history and payment history for all PECO customers. CIMS is the system for authorizing monthly meter reads and sending financial data to EPS
- WFM – Work Flow Management exception tool, which is generated by CIMS when an account fails to bill automatically as scheduled. WFMs are sent to System Billing's Access Tracker database for routing to the appropriate clerk for resolution. Once resolved, the clerk closes the Tracker exception and the WFM is closed when CIMS and the Tracker synchronize

PECO 004

Business Unit: PECO	Start of Process: Meter reading data is uploaded to CIMS.
Process: System Billing	End of Process: Billing data is sent to Bill Printing for distribution to customers.
Process Owner: Rich King, Manager Billing	IT Applications: CIMS, EPS, ShareDrive, MDM, CEDAR
Financial Statement Accounts Covered (from scoping document):	

Risks:

1 Customer bills are not generated from CIMS
2 Unbilled balances are not accurate, complete, or classified appropriately
3 Segregation of Duties and related user access is not adequate to reduce the risk of inappropriate or unauthorized customer transactions and financial reporting
4 Customers are incorrectly classified based on usage and are thus not being charged the appropriate rate
5 Customers are not billed the correct quantity / volume per the meter read.
6 Billing adjustments are inaccurate, invalid, and/or not reviewed
7 Late fees for customer bills are calculated incorrectly

Key Financial Controls:

1 On a monthly basis, System Billing selects a sample of three bills each month to be reviewed in detail. **(U311)**

2 Daily Management reviews results of the System Billing Daily No Bill report that identifies unbilled & delayed accounts. **(U310)**

3 Monthly, Billing Supervisor audits all billing adjustments over $50k, 1 per biller under $50k, and a sample of non-System Billing adjustments to ensure that they are valid, accurate & authorized. Additionally, Director review is performed for all adjustments over $500k. **(U312)**

4 CIMS automatically assigns customer accounts that met criteria for automatic bill estimation for no read or other criteria when automatic meters are unable to read CMS accounts for a particular route. **(Tested by IT; (U825)**

5 CIMS runs a pre-bill validation on all bills. If a bill does not pass the pre-bill validation, A WFM is created and routed to the Trainer Reviewer as part of CIMS SOX review (excludes MDM). **(Tested by IT; (U821)**

Key Reports / Key Spreadsheets

System Billing - Audit Form with supporting documents

Document Shows a document introduced into the process or created by the process. The flowchart should show the disposition of all documents.

Decision Point Shows a point in the process where a decision is made that leads to different processing steps.

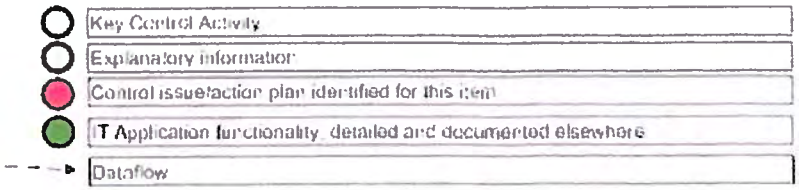
Process - Represents any process, function, or action and is the most frequently used symbol in flowcharting. An operation is performed anytime some change in an item/service occurs.

Terminator - Denotes the beginning or end of a process.

System/Database - A general system, application or database for any process step.

On-Page Connector Continues the flow on the same page. On-page connectors are defined with an alpha character starting with A.

Off-Page Connector Continues the flow to another page. Off-page connectors are defined with an alpha character and the reference to the page to which the flow is going, or the page from which the flow has come, depending on the nature of the connector.



PECO 005

EXHIBIT 3

4

PECO.
An Exelon Company

April 3, 2015

Deree Norman
5367 Thomas Avenue
Philadelphia Pa. 19143

Dear Mr. Norman,

I am writing in regard to the formal complaint you filed with the Pa Public Utility Commission and offer the following information:

Records show on 8/24/11, a field investigation was attempted to be completed at your home. An additional reading was obtained 57259 which verified the accuracy of the last billed reading, 57174 taken on 8/10/11. It also indicated a decrease in the units used per day from 9.7 to 6.0.

Our representative offered to verify the accuracy of the meter by performing a passing load check and to check for foreign wiring but you declined.

On 6/23/14, you contacted our office stating the winter bills from 12/2013 to 3/2014 were too high. An investigation was initiated.

On 7/16/14, a utility report was issued which included the following information:

I telephoned the phone number several times between 06/24/14 and 07/08/14. I also sent out a letter on 06/24/14 asking you to contact me.

Readings of your meter are obtained on a daily basis. The readings indicate that there was no mistake either in the previous reading of your meter or in the calculation of your bill.

The use from 11/2013 to 02/2014 and into 03/2014 was reflective of some type of electric heating. The use was over 1200kwhs through the winter season. The use dropped dramatically as the warmer weather came in.

As you know, winter weather generally increases requirements for electricity. One example is the effect of colder weather on heating systems. Shorter daylight hours result in more use of home lighting. Also, with more time spent at home, there is increased use of many small household appliances. As the colder weather lessens, and days get longer, the need for service should decrease resulting in a lower cost for such service.

In order to thoroughly investigate your formal complaint, I'd like to schedule a field investigation to complete a passing load check of the meter, an instrument test of the meter, an appliance analysis and a foreign load check.

Please call me at 215-841-6330 to schedule the appointment. Thank you for your cooperation in this matter.

Cordially,

Teresa A. Ferrier

Teresa A. Ferrier
Senior Regulatory Assessor

EXHIBIT 4

PECO
An Exelon Company

Legal Department
2301 Market Street / S23-1
P.O. Box 8699
Philadelphia, PA 19101-8699

Direct Dial: 215-841-6841
Fax: 215-568-3389

September 2, 2015

VIA OVERNIGHT MAIL
Deree Norman
5367 Thomas Avenue
Philadelphia, PA 19143

Re: Deree Norman v. PECO Energy Company
Docket Number C-2015-2472605

Dear Mr. Norman:

It was a pleasure speaking to you today regarding the above-referenced matter. As we discussed, to assist you with your meter concerns and your request to have the meter independently tested, I have enclosed the regulations at 52 Pa. Code § 57.21, et. seq. as well as Section 16.1 – 16.6 of PECO's Electric Tariff.

You will note in the regulations and tariff, that PECO must perform the test but it can be done in the presence of a representative "to open the meter, assist in the test and adjust and seal the meter after the test." The regulations and tariff also provide that the customer must pay the testing fee. If the meter does not test accurately than the fee is refunded to the customer. The testing fees are set forth in Section 52 Pa. Code§ 57.22(c).

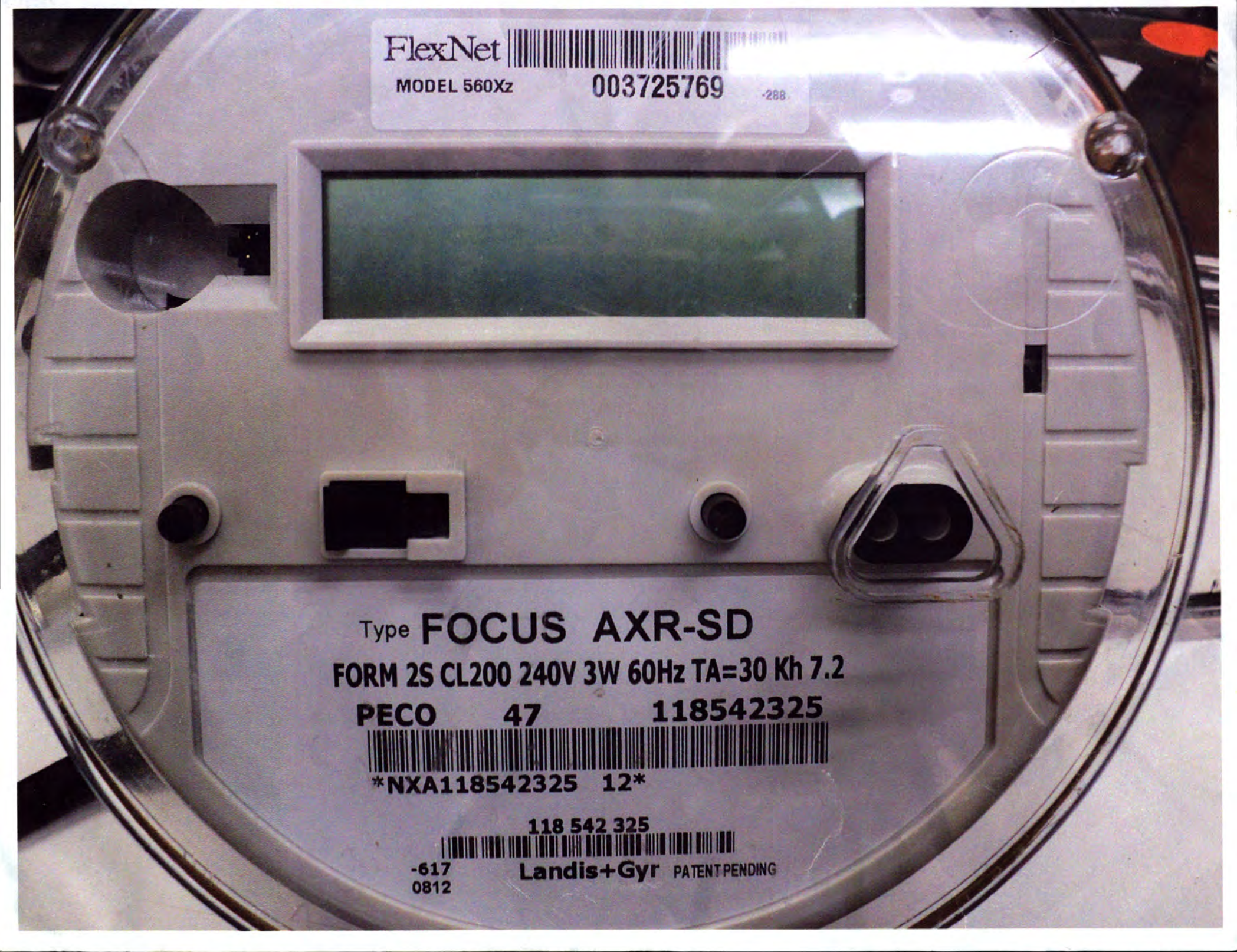
I have enclosed a photograph of the specifications for a Size 47 AMR meter, which is the meter type you currently have installed at your residence. Below "PECO" on the faceplate there is a barcode and just below the barcode is the interpretation of the barcode. The first 2 characters of the interpretation are "NX" which is the AEP set up code. This identifies the parameters the meter is to be tested with. NX – Form 2S, 240 volt, 30 Test amps, 7.2 Kh per disk revolution, 1 phase, 3 wires. This is the same information that is below the Manufacturer Type "FOCUS AXR-SD" on the faceplate.

I trust this responds to your request for information. If you have any questions, please do not hesitate to contact me or Teresa Ferrier at 215-841-6330.

Very truly yours,

Shawane L. Lee
Assistant General Counsel, PECO Energy
Encl.

cc: Teresa Ferrier, Senior Regulatory Assessor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Landis+Gyr PATENT PENDING

EXHIBIT 5a

PECO
An Exelon Company

SMART METER

UNIVERSAL DEPLOYMENT PLAN

January 18, 2013

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1. Executive Summary

On August 14, 2009, PECO Energy Company ("PECO" or the "Company") filed its *Smart Meter Technology Procurement and Installation Plan (Docket No. M-2009-2123944)* ("Smart Meter Plan" or "Plan") as required by Pennsylvania's Act 129 and the Implementation Order[1] issued by the Pennsylvania Public Utility Commission ("Commission" or "PUC"). Following hearings and briefing, the Company's Plan was approved, with minor modification, by the Commission in an Order entered April 22, 2010. PECO is now proposing to implement the second phase ("Phase Two") of its Smart Meter Plan, to complete substantially the installation of electric Smart Meters across its entire service territory by the end of 2014.

PECO has successfully executed or is on target to complete all of the planned elements of its Phase One deployment as detailed in its Plan. As the Company committed, PECO has implemented a well-managed and structured Smart Meter Plan to manage both costs and risks. PECO has mitigated cost through a disciplined procurement process and has mitigated risks by executing a planned, layered test process to effectively validate the Smart Meter technology. PECO has also executed a deployment of the core, underlying Advanced Metering Infrastructure ("AMI") technologies and established a reliable technological foundation for the universal deployment of Smart Meters (Phase Two). Finally, PECO has deployed the required technology and completed planning to implement a dynamic pricing and customer acceptance program to gauge how customers will utilize new pricing options that may be facilitated by Smart Meters.

PECO began general deployment of Smart Meters in March 2012, as set out in Phase One of the Smart Meter Plan. After experiencing a number of meter events during the spring and early summer of 2012, PECO temporarily suspended the installation of meters to additional

[1] See *Smart Meter Procurement and Installation Implementation Order by the Commission*, Docket No. M-2009-2092655 (Order entered June 24, 2009).

customers while those problems were thoroughly investigated. Following resolution of the metering issues, PECO restarted its deployment on November 19, 2012. Notwithstanding the schedule disruption, the Company still expects to complete Phase One deployment of 600,000 Smart Meters by June 2013.

The estimated costs presented in PECO's Smart Meter Plan have proven to be reasonably accurate. PECO currently projects that the cost of the Phase One deployment will be approximately $313 million, which is slightly higher than the upper end of the $250 - $300 million range set forth in the Smart Meter Plan. Similarly, the estimated cost to complete the universal deployment of meters in Phase Two is $282 million, compared to a preliminary Plan estimate of $250 million. Appendix A provides a summary of current estimated costs compared to original Plan estimates. PECO proposes to recover the costs of executing the Smart Meter Plan through its existing Smart Meter Cost Recovery Surcharge ("SMCRS"), which was implemented at the conclusion of the Phase One proceeding. In addition, the Company requests that it be allowed to defer the expensing of certain costs related to the replacement of initially deployed Sensus meters and to seek recovery of such costs through future SMCRS filings.

2. PECO's Smart Meter Plan

In response to the Smart Meter requirements of Act 129, and to comply with the Commission's Smart Meter Implementation Order, PECO developed a procurement and installation plan that began with a disciplined and detailed assessment of various technology and deployment options that could be employed to meet the Act's requirements. PECO retained, and its efforts were supported by, consultants with unique expertise and knowledge in the development of AMI system strategies. The consultants included Enspiria Solutions, Inc. (now part of Black and Veatch) and Accenture, two firms with specific expertise in AMI technology and system integration.

PECO also established a Program Management Office ("PMO") that provides organization and support, and fosters accountability for the Company's Smart Grid & Smart Meter ("SGSM") project. The PMO serves as a central source for information that enables effective decision making, facilitates the fulfillment of external reporting requirements and furthers the realization of the defined project goals. To support its efforts, PECO retained Greencastle Consulting to leverage its systematic approaches to project governance and project management.

Act 129 defines Smart Meter technology in terms of providing bidirectional communication capability that records electricity usage on at least an hourly basis. The Act further states that the Smart Meter technology must (1) provide customers with direct access to price and consumption information, (2) furnish them with direct information on their hourly consumption, (3) enable the implementation of time-of-use rates and real-time pricing programs, and (4) effectively support the automatic control of electricity consumption by the customer, the electric distribution company ("EDC") or a third-party, at the customer's request.

In its Implementation Order, the Commission stated its belief that Act 129 set forth minimal requirements and observed that Smart Meter technology can support more than just demand response and pricing programs. For example, Smart Meters have the ability to support a host of different functions, including maintenance and repair, theft detection, system security, consumer assistance, customer-generator net metering, and other programs that increase an EDC's efficiency and reduce its operating costs. Therefore, the Commission directed that an EDC's chosen Smart Meter technology must have the following capabilities:

1. Bidirectional data communications.
2. Remote disconnection and connection.
3. Ability to provide 15-minute or shorter interval data to customers, electric generation suppliers ("EGSs"), third-parties and the regional transmission organization ("RTO") on a daily basis, consistent with the data availability, transfer and security standards adopted by the RTO.
4. A minimum of hourly reads delivered at least once per day.
5. On-board meter storage of meter data that complies with nationally recognized non-proprietary standards such as ANSI C12.19 and C12.22 tables.
6. Open standards and protocols that comply with nationally recognized non-proprietary standards, such as IEEE 802.15.4.
7. Ability to upgrade these minimum capabilities as technology advances and becomes economically feasible.
8. Ability to monitor voltage at each meter and report data in a manner that allows EDC to react to the information.
9. Remote programming capability.

10. Communicate outages and restorations.
11. Ability to support net metering of customer-generators.
12. Support automatic load control by EDC, customer and third-parties, with customer consent.
13. Support time-of-use and real-time pricing programs.
14. Provide customer direct access to consumption and pricing information.

The technology and equipment being installed by PECO was obtained through a rigorous procurement process to ensure it possesses all of the foregoing capabilities.

In its 2009 filing, PECO proposed to implement its Smart Meter Plan in two phases. Phase One would focus on the selection of the AMI technology to be deployed, the implementation of a meter data management system ("MDMS") and other information technology ("IT") investments, including the testing and validation of the AMI technology and the deployment of the AMI communication network. Phase One was also expected to include the deployment of Smart Meters in controlled quantities and the development and implementation of a program to test dynamic pricing and customer acceptance. Phase Two would then complete the full-scale deployment of Smart Meters across PECO's entire service territory.

PECO proposed three major filings with the PUC and a separate, but contemporaneous, grant application with the U.S. Government pursuant to the American Recovery and Reinvestment Act ("ARRA"). The first filing was fulfilled with PECO's Smart Meter Plan filed with the Commission on August 14, 2009. PECO subsequently entered into a Joint Petition for Partial Settlement ("Settlement") with intervening parties, which was filed with the Commission on November 25, 2009. The Commission, on April 22, 2010, issued an Opinion and Order

approving PECO's Smart Meter Plan[2] and Settlement, including the Company's Phase One plan for procurement of the necessary AMI technology, the initial IT work (including the initial MDMS investment) and the procurement of an initial quantity of Smart Meters.

As part of its approved Plan, PECO committed to separately filing a dynamic pricing and customer acceptance program. That second filing was made on October 28, 2010 and was subsequently approved by the Commission on April 14, 2011.[3] On April 29, 2011, the Commission initiated a retail electricity market investigation with the goal of "making improvements to ensure that a properly functioning and workable competitive retail electricity market exists in the state."[4] As part of that investigation, the Commission issued the *Retail Market Order*, which recommended that "Energy Delivery Companies (EDCs) contemplate contracting with an Electric Generation Supplier (EGS) in order to satisfy their [Act 129] time-of-use (TOU) requirement."[5] In response to the Commission's *Retail Market Order*, PECO revised its dynamic pricing plan to include participation by an EGS and subsequently filed a revised plan to reflect the change on April 2, 2012. The Commission approved PECO's revised dynamic pricing plan on September 13, 2012.[6] Finally, PECO's approved Smart Meter Plan called for a third filing to be submitted toward the end of the Implementation Order grace period, describing the Company's plan for the universal deployment of Smart Meters throughout its

[2] See Commission's *Opinion and Order on Petition of PECO Energy Company for Approval of Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123944 (Order entered May 6, 2010).

[3] See Commission's *Opinion and Order on Petition of PECO Energy Company for Approval of its Initial Dynamic Pricing and Customer Acceptance Plan*, Docket No. M-2009-2123944 (Order entered April 15, 2011).

[4] See *Investigation of Pennsylvania's Retail Electricity Market: Recommendations Regarding Upcoming Default Service Plans*, Docket No. I-2011-2237952 (Order entered April 29, 2011).

[5] See *Investigation of Pennsylvania's Retail Elec. Market: Intermediate Work Plan*, Docket No. I-2011-2237952 (Order entered March 2, 2012) ("*Retail Market Order*").

[6] See Commission's *Opinion and Order on Petition of PECO Energy Company for Expedited Approval of its Dynamic Pricing Plan Vendor Selection and Dynamic Pricing Plan Supplement*, Docket No. P-2012-2297304 (Order entered September 26, 2012).

service territory. The submission here is that third filing anticipated by PECO's initial Smart Meter Plan.

Concomitant with the filing of PECO's Smart Meter Plan in 2009, PECO also applied for a $200 million Smart Grid Investment Grant ("SGIG") from the Department of Energy ("DOE"). In November 2009, PECO was informed by the DOE that it was the recipient of the $200 million SGIG. Approximately $140 million is being applied to the net costs of PECO's Smart Meter Phase One deployment[7]. As committed in PECO's Smart Meter Plan, PECO has used a substantial portion of those grant funds to expand the initial deployment of Smart Meters during Phase One, increasing the deployment from 100,000 meters to 600,000 meters. Because of the receipt of SGIG monies to offset deployment costs, PECO also committed to universal deployment of Smart Meters within 10 years, rather than the fifteen year deployment permitted by Act 129. Under the terms of its Grant Agreement with the DOE, PECO is obligated to complete the Phase One installation of 600,000 Smart Meters by April 2014.

The costs of PECO's Smart Meter Plan were carefully estimated and validated with key potential AMI vendors. The costs of Phase One, including the installation of 600,000 meters, were preliminarily estimated at $250 -$300 million. The Plan also projected that the total Smart Meter Plan project, including the universal deployment of meters to the remaining 1.2 million PECO customers, would cost between $500 and $550 million. As noted previously, PECO now estimates that Phase One will cost $313 million and Phase Two will cost approximately $282 million.[8] The Commission also approved PECO's proposal to recover the net costs of its Smart Meter Plan (i.e., total project costs less DOE reimbursements and net of avoided AMR costs and

[7] The remaining $60 million of SGIG funds from the DOE are being applied to the net costs of PECO's Smart Grid investment.

[8] These estimates do not reflect approximately $18 million of costs (net of DOE reimbursement) related to the meter events experienced during Phase One.

operational benefits as identified in its original Smart Meter Plan filing) through a reconcilable surcharge (the SMCRS) under Section 1307 of the Public Utility Code.

3. Smart Meter Plan Phase One Status

PECO has completed most of the tasks for Phase One of its Smart Meter Plan, including vendor selections, technology selections, testing, and initial deployment steps.

3.1 Vendor Selection and Contracting Process

PECO has executed contracts for all key Smart Meter technology and system components required for the successful implementation of Phase One of its Plan. The following table is adapted from the Company's original Smart Meter Plan and details the key system components and selected contract vendors.

Table 1: AMI System Components

Component	Definition	Contracted Vendor(s)
AMI Network	Comprised of: 1) Network components (collectors, router, and repeaters) that connect Smart Meters to the AMI Host via higher capacity communication transport technologies 2) AMI Host, which is a computer system that acts as the network controller	Sensus USA, Inc.
Communications Network(s)	Comprised of: 1) Core Foundation Network, which is a higher capacity transport system from the AMI Network to the AMI Host 2) Additional communications solutions that bridge between the AMI Network and the Core Foundation network when necessary	Alcatel-Lucent USA, Inc.
MDMS	The Meter Data Management System which: 1) Serves as a repository for meter interval usage and event data 2) Performs validation, editing and estimating (VEE) operations on raw data to allow the data to be used for billing purposes	Oracle America, Inc.
Middleware	Standard software components that manage the integration of: 1) The AMI Host with the MDMS 2) The MDMS with IT back office systems to perform customer billing, outage management and other critical business functions	IBM Corporation
System Integration	IT professional services that are engaged in the analysis, design, build, test and deploy phases of the integration of the AMI Host, MDMS, Middleware and IT back office systems	Accenture

Meters	The physical Smart Meter end points that are used to record and store interval usage data and events and communicate to the AMI Network	Meters: Sensus USA, Inc.; Elster Solutions, LLC; Landis+Gyr (L+G) Meter Installation: Grid One Solutions
Web Presentment	A web presentment platform that enables customers to view their own consumption data and supports the implementation of the "Green Button" initiative.	Opower, Inc.

3.1.1 Selection of AMI Network Vendor

PECO engaged in a careful and thorough process to select its AMI Network vendor. Of particular importance was the need for an AMI Network vendor to meet the requirements of Act 129. For example, following an initial 30-month grace period, EDCs must furnish Smart Meters to customers who request them, regardless of whether those requests are in accordance with the EDC's deployment plan. This statutory requirement, in turn, can, and in PECO's case did, inform the decision as to the type of AMI Network selected.

By way of illustration, a mesh-type AMI communications network utilizes deployed AMI meters to communicate in a peer-to-peer manner with other AMI meters on the system to ultimately communicate with the entire AMI system. This type of AMI system relies on a minimum density of deployed meters to maintain reliable communications. If an individual customer situated at a remote location within the service territory were to request a meter prior to PECO's planned deployment of the Smart Meter mesh to that area, meters would have to be deployed out of sequence, in sufficient density, and in specific locations to accommodate that remote customer. Conversely, a point-to-point communications network (like Sensus) relies upon communications towers erected throughout the service territory. The communication towers provide a much broader communications footprint such that each meter communicates directly with the AMI network with minimal reliance on neighboring meters to complete the

communication paths. Thus, with a point-to-point system, it is much easier to install a remote meter and have it communicate immediately with the network. In short, the AMI technology selected by PECO specifically, efficiently and cost effectively will accommodate *ad hoc* requests for the installation of Smart Meters.

Immediately following the filing of its Smart Meter Plan in the summer of 2009, PECO conducted a series of workshops with AMI vendors. After an exhaustive information gathering effort, PECO implemented a detailed Request for Proposal ("RFP") process. This process involved a well proven methodology for the solicitation, evaluation, and prudent selection of the "best fit" vendor solution to execute PECO's Smart Meter Plan. The vendor selection criteria used in the RFP evaluation process were the Technical Analysis, Commercial Assessment, Risk Assessment (*i.e.*, business risk), and Financial Health of the vendor. In addition, the Technical Analysis scored the vendor on several factors, including network performance, interoperability, technological maturity, technology risk, network performance, and security. The vendor responses were evaluated and narrowed to a list of three finalists. Of the three, Sensus was selected based on rankings of all four evaluation criteria. An important factor in Sensus' selection as PECO's AMI network vendor was the fact that its technology utilizes a point-to - point network and thus provides PECO with the ability to comply with Act 129's requirement that EDCs accommodate individual customer requests for meters prior to full-scale deployment in the customer's service area.

PECO tested the meters of four different suppliers: (Sensus, L+G, Elster, and General Electric) and identified meters that would be compatible with the Sensus AMI network and meet the Act 129 (and PECO's) Smart Meter requirements. From this process, PECO decided to obtain AMI meters from both Sensus and L+G for its Phase One deployment. Subsequently,

following a series of overheating events with Sensus meters, PECO elected to temporarily suspend the Phase One Smart Meter deployment and replace installed Sensus iCon A Form 2S-RD meters with equivalent L+G meters.

3.1.2 Meter Testing/Technology Acceptance

PECO began testing AMI meters at its Berwyn Meter Shop in September 2010. The Berwyn site includes an indoor lab for shop testing, first article testing and accuracy testing. The site also includes a sample of meters in an outdoor yard where functional testing is performed to ensure that the meters and network systems meet Act 129 requirements. The outdoor testing simulates conditions where network communications, outages, remote connection and disconnection and other required functionalities can be tested and confirmed.

PECO expanded its meter testing by deploying AMI meters in controlled suburban and urban test environments. In the August 2011 – October 2011 timeframe, PECO installed 200 AMI meters in the suburban Berwyn area for accuracy and functional testing. In the October 2011 - November 2011 timeframe, PECO installed an additional 150 AMI meters in Philadelphia to perform urban environment testing. The goal was to conduct the same accuracy and functionality testing as in Berwyn, but within a dense city environment. The suburban and urban testing provided evidence that the network and meters were capable of successfully meeting the Act 129 requirements. Finally, between December 2011 and the end of February 2012, PECO installed 1,800 AMI meters on customer and employee premises. This early deployment provided an additional opportunity to test the installation and billing processes, network performance and customer acceptance of the AMI meters.

In addition to the testing summarized above, PECO participated in a "Performance Evaluation of Integral Disconnect Switches for Single-Phase Revenue Meters" hosted by the National Electric Energy Testing Research and Applications Center ("NEETRAC")[9] in May 2010. The evaluation was conducted by an electric industry consortium, and its purpose was to test the disconnect functionality in AMI Meters. The testing was important from both a safety and functionality standpoint, as the remote connect-disconnect functionality was a requirement of the Commission's Implementation Order. NEETRAC evaluated the meter disconnect switches for, among other things, risks to customer premises from overheating or fires as a result of the disconnect switch. NEETRAC tested five meters made by Sensus, L+G, Elster, Itron and Echelon. No abnormal temperature changes were found during the tests that would indicate the switches were prone to causing overheating or fires.

3.1.3 Filing of Smart Meter Vendor Contracts

On February 16, 2011, PECO filed its AMI Meter contracts with Sensus, L+G and Elster with the Commission. Although the Commission did not require PECO to seek approval of the contracts, the Company did so nonetheless to demonstrate that it was implementing its proposed and approved Smart Meter Plan. PECO also filed the AMI Meter contracts to provide the Commission with an opportunity to review the terms and comment.

3.2 Phase One Smart Meter Technology Deployment

PECO has successfully deployed the underlying infrastructure required to provide Smart Meter technology to its customers in compliance with Act 129 and the Implementation Order.

[9] NEETRAC is a self-supporting, membership based center within the School of Electrical and Computer Engineering at Georgia Tech.

As part of this infrastructure investment, PECO has installed the core AMI communications network, consisting of 163 Tower Gateway Base-stations (TGBs) to communicate between AMI Meters installed in the field and PECO's AMI system controller. PECO has also successfully implemented the key IT System elements required for the initiation of Smart Meter deployments as part of its Phase One efforts. These include the implementation of the AMI System Applications and Network Controllers, initial deployment of the MDMS, the deployment of the Enterprise Service Bus (or "Middleware"), and initial integration of the AMI network into PECO's billing and "back office" systems. These underlying technologies were evaluated for successful integration and performance characteristics through a sequence of escalating acceptance tests, which focused on ensuring the functionality of installation tools, deployment processes, system interfaces, billing procedures and meter accuracy.

In its Smart Meter Plan, PECO planned to leverage MDMS systems then being used in a pilot project at Exelon. However, technical limitations were discovered during further testing by PECO of the MDMS being used in the Exelon pilot. In response, PECO promptly contracted with an alternate MDMS vendor whose system had been thoroughly assessed during the RFP process. In addition, PECO designed an interim solution that allowed for initial deployment of Smart Meters without an installed MDMS. That interim plan was successful as the IT systems were in place to begin meter deployment earlier and allowing for a gradual phase-in of the new MDMS system which is now underway.

Following field tests, general deployment of Smart Meters began in March 2012. As the number of deployed meters increased, PECO began to experience and track specific meter events at certain properties where the Form 2S-RD Sensus Smart Meter was installed. While some issues may be expected when extracting and replacing a large numbers of meters, the nature of

some of the meter events, specifically overheating, began to raise safety concerns. Because of those concerns PECO immediately began to investigate the meter events and to gather data to try to identify and resolve the cause(s) of those events. PECO also established processes to respond rapidly to any additional reported meter events. PECO temporarily suspended the installation of Smart Meters to additional customers and initiated testing by respected independent testing laboratories of vendors' meters as part of its effort to identify the cause(s) of the meter events and to assure the safety of the meters it would install in the future. In that regard, PECO retained Underwriters' Laboratory ("UL") to test L+G meters and, based on that testing, UL concluded that L+G meters were safe for consumer use. In addition, PECO began to use meters manufactured by L+G to replace previously-installed meters of the type that had experienced meter events. PECO intends to move forward with L+G meters during universal deployment, but continues to evaluate meters from other vendors (including other meter models of the vendor who provided the previously-installed meters), leaving open the possibility of using more than one meter vendor during universal deployment. If PECO does so, it will notify stakeholders and the Commission.

3.3 Stakeholder Collaborative Process

Pursuant to the Commission's April 22, 2010 Order, PECO initiated a collaborative process with interested statutory advocates, government entities, meter-technology providers and other stakeholders to promote a robust dialogue regarding effective and efficient implementation of the Plan. To date, PECO has held fourteen collaborative meetings to review the overall progress of the Smart Meter Plan implementation (e.g. network deployment, sourcing, budget, and IT system deployment). Generally, these collaborative meetings have been well attended by representatives from the Office of Consumer Advocate (OCA), the PUC's Bureau of

Investigation and Enforcement (I&E), the Office of Small Business Advocate (OSBA), the Philadelphia Area Industrial Energy Users Group (PAIEUG), the Philadelphia Housing Authority (PHA) and other stakeholders. PECO has also held seven separate PUC briefings to provide up-to-date information on key issues. These briefings were generally attended by 25-30 representatives of various PUC Commissioner Staffs, Bureaus and Offices. Appendix B summarizes the collaborative meetings and PUC briefings held to date and the key topics discussed at those meetings.

These stakeholder collaborative meetings have been highly successful in communicating the Smart Meter Plan to affected stakeholders and in providing an understanding of the scope of the investment, technology being implemented, and the expected impacts. For example, the on-site tour held at PECO's Berwyn complex on June 17, 2011, familiarized the PUC staff and other stakeholders with AMI network and meter technology, including distribution automation ("DA") technology validation and in-home device demonstrations.

PECO plans to continue this stakeholder collaborative process through Phase Two.

4. Phase One Completion Plan

PECO expects to conclude the deployment of the underlying advanced metering infrastructure, including the initial deployment of 600,000 Smart Meters, by June 2013. Notably, PECO has already completed the deployment of the AMI network, which will enable the installation of Smart Meters upon customer request and for all new construction.

4.1 Smart Meter Deployment Schedule

In accordance with its Smart Meter Plan, PECO is coordinating field installation efforts with its primary installation contractor, Grid One Solutions, maintaining processes to ensure quality and safety during the installation process. Notwithstanding the meter events that resulted in the temporary suspension of deployment and the replacement of installed Sensus Smart Meters, PECO expects to complete deployment of the initial 600,000 Smart Meters by June 2013. To this end, PECO has devoted a specific team of PECO electrical technicians and back office staff to support the installation process, mitigate field installation issues, and efficiently process customer exceptions identified as part of the upgrade of the existing AMR radio meters to new AMI Smart Meters. As of this filing, PECO has installed over 300,000 smart meters at customer premises.

4.2 IT System Deployment

During Phase One, the information technology ("IT") infrastructure required for initial deployment of Smart Meters was successfully implemented and tested. The IT systems will continue to be modified, upgraded, and enhanced as part of the completion of Phase One and Phase Two. As part of the completion of Phase One, additional IT system capabilities are anticipated, including the following:

- MDMS Interval Usage synchronization: Ensure that all interval data processed and sent to systems and external parties remains synchronized across those systems. Implement validation and audit mechanisms to validate this information.
- Remote Connect/Disconnect functional integration: Implement the integrated remote connect/disconnect functionality of the AMI Network and Meters with PECO's Work Management systems.
- Integration of Meter Outage Event Data to Outage Management System: Utilize power out and power up alarms to more quickly identify outage conditions and nested outage situations. Received meter alarms will be validated and sent to the Outage Management System for inclusion in the outage analysis along with data from customers and SCADA.
- Systems to support the Dynamic Pricing Program: Implement the necessary customer and usage data integration with Dynamic Pricing vendors to enable new Dynamic Pricing rates for customers. Additionally, support the AMI Network integration to test and validate the capabilities of in home technologies.
- Rollout of interval data Web Presentment: Implementation of Web Presentment to customers via the PECO OPower solution. Customers will have access to their AMI meter interval data through PECO's web site within the required timeliness of Act 129. The web presentment solution will also enable the "Green Button" initiative which will allow customers to securely download their own easy-to-understand energy usage information when it is implemented.
- Provision of Interval Data to Third Parties: Implement solutions to receive notification from third parties of the desire to receive interval data from customer

AMI meters as well as the ability to deliver that data for both billing and historical data purposes.

PECO anticipates that these additional capabilities will enable the conversion of PECO's Regional Transmission Organization (RTO) settlement process from the use of aggregate load curves to interval-based billing by 2015.

5. Phase Two Universal Deployment Plan

PECO is proposing to substantially complete Phase Two's universal deployment of Smart Meters by the end of 2014. This proposal is based on a robust cost-benefit analysis of the 2014 deployment scenario and a more deliberate deployment plan calling for full deployment by the end of 2019. The accelerated schedule was chosen, in large part, in recognition of the customer benefits arising from the remote connect functionality of AMI technology,[10] including:

- Expanded opportunity to participate in energy efficiency programs, enabling customers to better understand and manage their energy needs.
- Expedited delivery of operational benefits, including avoided connection costs and reduced charge-offs and societal benefits due to the ability to disconnect hard-to-reach meters.
- Avoidance of ongoing electric automated meter reading ("AMR") managed service fees associated with existing AMR meters.
- Mitigation of potential AMR transition costs and system obsolescence.
- Economies of scale from both volume purchase opportunities for Smart Meters, as well as synergies between Phase One and Phase Two that will reduce deployment costs.

5.1 Plan Overview

The proposal to accelerate the universal deployment of Smart Meters anticipates the procurement and installation of approximately 1.2 million Smart Meters, and associated IT infrastructure scaling to manage the expanded number of electric meter reads, over two years

[10] Between July and October 2012, PECO completed a pilot utilizing the remote disconnect ("RCD") feature. In these 4 months, PECO conducted 550 transactions (both move-in/move-out as well as terminations/restorations for delinquency). During the pilot PECO achieved a 94% success rate executing the transactions within an average of 24 seconds. Lessons learned from the pilot will be built into the 2013 automated RCD program functionality.

(2013 – 2014). While PECO expects to substantially replace all existing AMR meters with Smart Meters by the end of 2014, a small percentage of the meter population (*i.e.*, "difficult-to-access" meters) will not be reached until after the targeted conclusion of Phase Two. These meters will be converted to Smart Meters in an efficient and safe manner following all current practices for acquiring access to these meter sites. In addition, some of the existing commercial or industrial meters that are currently providing many Smart Meter capabilities under a separate technology may be migrated to the Smart Meter system following the completion of Phase Two.

PECO's Plan for universal deployment will require the following additional IT infrastructure upgrades to support the expanded capacity of Smart Meters:

- Interval data based settlement capability: Upgrade PECO's systems to settle the retail market based on actual interval data rather than generic load profiles.
- Expansion of the AMI Infrastructure and Business Continuity/Disaster Recovery Solution: Validate the capacity and disaster recovery capabilities of the IT Infrastructure (servers, storage, etc.) installed for Phase One to ensure scalability up to 1.6 million in Phase Two.
- AMI Enhancements: Validate capacity and scalability of all applications implemented and developed for Phase One to ensure scalability up to 1.6 million meters in Phase Two.
- MDMS upgrade to the next generation offered by the vendor for capacity, performance, and continued vendor supportability: A lifecycle upgrade of the MDMS.

5.2 Economic Analysis

PECO estimates that it will cost approximately $282 million to complete Phase Two of the Plan by the end of 2014. As shown in Table 2 below, this figure is offset by approximately $342 million of projected cost savings. In contrast, the more deliberate schedule alternative of full deployment by 2019 would cost customers approximately $58 million more on a net present value basis due primarily to (1) an increase in meter hardware and installation costs and (2) ongoing AMR fees.

Table 2: Estimated Phase Two Costs and Benefits for 10 Year Period (2012-2021)

Cost/Benefit Category	10-Year: Completion by end of 2019 ($M)	Accelerated: Completion by end of 2014 ($M)
AMI Deployment costs	($252.6)	($242.4)
IT Enablement costs	(38.9)	(34.0)
Business Integration costs	(5.7)	(5.7)
Total Phase Two Costs	**($297.1)**	**($282.1)**
Total Benefits	**$231.5**	**$341.8**
Total Net (Costs) - Benefits	**($65.6)**	**$59.7**
*Net Present Value of (Costs) - Benefits**	*($75.9)*	*($17.7)*

* *see Appendix C for detail*

5.3 Accelerated AMR Depreciation

Completion of the Phase Two universal deployment by the end of 2014 will result in a significant acceleration of the depreciation of the AMR meters. Consistent with the settlement of the Company's Phase One proceeding at Docket M-2009-2123944, the accelerated depreciation will be recovered ratably through the year 2020. The acceleration of depreciation also has the effect of deferring the reversal of state tax benefits previously flowed through to customers to synchronize with the recovery of the plant investment. Appendix E illustrates the net state income tax liability associated with the difference between the ratable accelerated depreciation on AMR and the amount included in base rates.

5.4 Phase Two Cost Recovery

PECO proposes to recover the estimated Phase Two deployment costs identified in Appendix C, including a 10% return on equity as approved by the Commission in PECO's last base rate proceeding, through the SMCRS adopted in its Phase One Smart Meter case.

The estimated customer bill impact of Phases One and Two of PECO's Smart Meter Plan is summarized in Appendix D. The key cost components include:

- Incremental expenses associated with the new AMI system including network deployment, project management, IT system implementation and ongoing IT support costs;
- Annual depreciation expense on the new AMI System capital investments, as well as accelerated depreciation related to the early retirement of existing AMR assets and the associated tax impacts;
- A return on the AMI net investment reflecting PECO's capital structure with a 10% return on equity, the income taxes associated with the equity portion, and the flow through of the benefit of accelerated depreciation used in calculating state income taxes; and
- Cost savings associated with the avoidance of vendor fees that PECO currently pays for AMR meter reading services and operational efficiencies generated by the remote connect feature of the AMI meter technology.

The Phase Two cost projections presented in Appendix C are estimates and subject to change based on actual costs incurred. Additionally, changes in scope from the original Plan may be required to address added functionality capabilities and/or integration of the AMI infrastructure with PECO's existing IT systems or implementation of other capabilities or uses as directed by the Commission. PECO expects these changes will be incorporated into the Phase

Two work plan and the associated costs to be recovered through the SMCRS. Consistent with Phase One, PECO will continue to work to mitigate any and all potential costs risks through disciplined procurement processes, the effective testing of technologies, and optimized work processes. In addition, PECO will review any significant changes in cost or scope with stakeholders through the collaborative meeting process.

6. Miscellaneous Issues

6.1 Customer Communication

As part of its Smart Meter initiative, PECO is executing a robust, integrated internal and external communications strategy. The strategy has been developed based on industry best practices and key lessons learned – to improve satisfaction by educating customers and key stakeholders, generating awareness and promoting understanding. Prior to developing the plan, the Company conducted information sessions with more than a dozen other utilities, completed three in-depth employee focus groups and six extensive customer focus groups.

The campaign included the following internal communications:

- Creation of a dedicated cross-functional team of employees from across the organization to service as "Change Agents" or ambassadors to help educate employees on this important project. This team meets monthly to ensure good knowledge of the most up-to-date project information.
- Conducted regular Town Hall meetings and a variety of service locations for all employees to hear first hand from leadership, the project team and Change Agents.
- Regularly update employees through direct voicemails from executives and project leads.
- Developed comprehensive standard messaging to ensure employees were well equipped to respond to questions from customers, friends, family and neighbors.
- Provided easy to use PECO Points ring cards with important project messaging for field employee use when interacting with customers.
- Use of existing internal communication vehicles to keep employees informed (PECO Connection and Inside Exelon).

- Created dedicated Intranet page which could be updated quickly to serve as resource for all project messaging and information.

The following external communications were included in the campaign:

- Completed extensive media backgrounding sessions with all key reporters in advance of project to ensure a complete understanding of the project prior to needing to write about it.
- Developed comprehensive standard messaging.
- Created a customer-friendly project brochure.
- Created dedicated web page (peco.com/technology) which could be updated in real-time to serve as an information resource to customers. The web page was also enabled with a link to ask a question directly to a member of PECO's project team about the program.
- Completed an article in PECO's customer newsletters (energy@home / energy@work) to update customers about the project.
- Developed comprehensive outreach presentation for use as needed at local community events.

And finally, an aggressive customer communications campaign was launched to ensure customer awareness and engagement prior to meter installation. Specifically, customers will receive the following communications concerning their meter replacement:

- Direct letters at 45-days and 21-days in advance of meter replacement work.
- A proactive telephone call one week prior to installation.

- Upon arrival at a customer's property, installers will knock on the customer's door to answer any questions he/she may have if available.
- Customers also are left a door hanger at the completion of work.
- Customers with inaccessible meters also will receive a follow-up direct call to schedule an installation appointment.

6.2 Cyber Security

Cyber Security encompasses the identification, implementation and management of appropriate controls to ensure the confidentiality, integrity and availability of Smart Meter assets.

During Phase One, PECO retained a Black and Veatch as a consultant to help launch an ongoing security assessment for the Smart Meter program, which instilled confidence in the underlying AMI technology, including the ability to encrypt data. In concert with PECO's Cyber Security Plan under its DOE SGIG program, PECO will continue its holistic, long-term security management approach for both Smart Meters and Smart Grid systems that incorporate appropriate controls including data privacy elements. For example, PECO has adopted a layered "defense-in-depth" strategy incorporating physical, platform, network, application, information and process controls. This strategy provides for an appropriate end-to-end security posture via numerous security controls applied to Smart Meter devices, systems, communications, users, applications and other critical infrastructure elements. Together these controls provide the ability to mitigate, detect and remediate threats to the entire Smart Meter infrastructure and include specific controls such as network segmentation and firewalls, end-to-end encryption, security monitoring and incident management, and other appropriate security controls.

In addition, PECO has implemented both security incident management and event monitoring processes for the Smart Meter environment that personnel must follow from initial

detection, response, reporting, and resolution through root cause analysis and final mitigation. PECO's incident response processes address the capability to continue or resume operations of Smart Meter assets in the event of disruption of normal Smart Meter system operations. PECO has documented and implemented specific procedures for incident handling from intrusion detection systems which forms a critical cyber security asset within the overall "defense-in-depth" strategy. PECO has also established a "Command Center" for Smart Meter operational support, including system monitoring, incident management, change control, and configuration management for the Smart Meter system.

6.3 Data Privacy

Data privacy encompasses the relationship between the collection and dissemination of information, as well as the practices, processes and technology associated with those activities, the public expectation of privacy, and the legal and political issues surrounding them. Privacy concerns exist wherever personally identifiable information is collected and stored, in digital form or otherwise.

PECO's Smart Meter infrastructure protects customer-identifying information (*.e.g.*, home addresses) in several respects. First, such information is not stored in the two-way communicating meters or communicated across the AMI network. Second, energy usage data collected by Smart Meters is encrypted and protected with the same methods as online banking and ATM machines. Third, these data are transmitted to PECO via a secure network that complies with the industry's best practices for data privacy. This approach incorporates an in-depth layered security strategy across the entire system to protect customer data and preserve the reliability of the electric distribution system. Because of the importance of cyber security and data privacy issues, PECO has held several stakeholder meetings specifically to discuss the

safeguarding of Smart Meter data. Some of the key issues that have surfaced for continuing discussion include:

- Ensuring privacy protection for victims of domestic violence and other related crimes
- Security controls for information storage, transmission and sharing
- Customer education regarding their privacy rights
- Procedures for customer consent

PECO protects the privacy of customer data in compliance with all existing statutes and laws. If the Commission were to decide that a more formal process might be called for, the Company suggests that the Commission consider initiating a statewide proceeding to examine these and other issues surrounding smart meter data security and privacy. As current regulations were written with monthly meter read data in mind, the PUC should consider the increased sensitivity with interval data provided by the Smart Meter. The Commission and stakeholders might consider using the best practices developed by the North American Energy Standards Board (NAESB) as a starting point in their discussions.

6.4 Smart Meter Opt-in Process

The Implementation Order requires PECO to furnish Smart Meters to customers upon their request after the expiration of the 30-month grace period and prior to scheduled universal deployment in their areas. As part of its Phase One Smart meter filing, PECO submitted, and the Commission approved, the appropriate tariff provisions needed to address such requests. While PECO therefore expects to comply with the opt-in requirement, it nonetheless requests the ability to petition the Commission for a waiver to suspend this requirement if opt-in requests reach a

level that would negatively impact the synergies associated with PECO's proposed accelerated universal deployment plan.

This request is based on the expected impact of the accelerated deployment plan on workforce availability. The proposed Phase Two deployment will include a very orderly, planned deployment with focused contractor and PECO work forces executing efficient installation processes. Inefficiencies associated with a significant level of ad hoc opt-in requests could create significant disruptions in both the physical installation and the network operation processes, causing PECO to incur unreasonable travel and logistics costs. Moreover, because PECO is committing to deploy Smart Meters to all its customers within 26 months of the end of the grace period, customers who desire a Smart Meter will receive one within a reasonable period of time, even if the Company is required to suspend the opt-in process.

At the time of this filing, opt-in requests have been minimal and PECO completed its first opt-in install on January 9, 2013.

6.5 Cost Recovery for Meter Events

As described in detail in Section 3.2, PECO has undertaken significant corrective and preventive action in response to the meter events experienced during 2012, and has incurred costs associated with those actions. To date, PECO has purchased approximately 324,000 Sensus meters at a total cost of approximately $29 million, with an original value of $15 million (net of $14 million of DOE reimbursement). PECO has incurred approximately $6 million of installation costs for the Sensus meters, with an original value of $4 million (net of $2 million of DOE reimbursement). Accordingly, PECO will defer the costs it has incurred and the costs it may continue to incur related to the 2012 meter events while it works to resolve issues related to

cost responsibility with its meter vendor. PECO intends to have customers receive the full benefit of DOE reimbursements received under the SGIG, as PECO has previously committed. Similarly, PECO intends to reflect the amount it recovers from its meter vendor as a reduction to the costs it is deferring. When a resolution acceptable to PECO has been achieved with its meter vendor, PECO will seek Commission approval to fully recover any remaining deferred costs through its currently authorized Smart Meter Recovery Surcharge. In any event, PECO will not seek a return on the deferred meter-event costs.

7. Appendices

Appendix A

Smart Meter Project Costs

(Current vs. Original Estimate as of January 18, 2013)

($'s in Millions)	PHASE ONE		PHASE TWO		TOTAL PROJECT		
	Original Estimate	Latest Estimate	Original Estimate	Latest Estimate	Original Estimate	Latest Estimate	
AMI Deployment:							
Meters and Installation	$ 92	$ 105	$ 179	$ 213	$ 271	$ 318	(a)
Network Communication System	53	44	-	-	53	44	(b)
Project Management	10	32	28	30	38	61	(c)
Total AMI Deployment	**155**	**181**	**208**	**242**	**363**	**423**	
DOE Compliance	**10**	**7**	**-**	**-**	**10**	**7**	
IT Applications and Support	**122**	**118**	**42**	**40**	**164**	**158**	(d)
Customer Programs	**13**	**7**	**-**	**-**	**13**	**7**	(e)
Total Smart Meter Costs	**$ 300**	**$ 313**	**$ 250**	**$ 282**	**$ 550**	**$ 595**	(f)
Recovery from DOE	**(143)**	**(139)**	**-**	**(2)**	**(143)**	**(141)**	(g)
Total Net Smart Meter Costs	**$ 157**	**$ 175**	**$ 250**	**$ 280**	**$ 407**	**$ 455**	

Notes:

(a) Increased meter pricing

(b) Reduced scope of Tier 2

(c) Increased AMI deployment resources

(d) Latest estimate includes AFUDC of $3M in Phase One and $2M in Phase Two

(e) Revised estimate per PECO's Supplemental Dynamic Pricing Plan approved by PUC in September, 2012

(f) Latest estimate excludes costs to be deferred for meter events as described in Section 6.5 of this Plan

(g) Reflects DOE Stimulus Grant (SGIG) matching funds

Appendix B:

Summary of Stakeholder Collaborative Meetings

No.	Date	Event	Key Discussion Topics
1	9/22/2009	Stakeholder Collaborative	• Discuss Smart Meter Collaborative meeting process
2	10/7/2009	Technical Conference (PUC Briefing)	• Smart Meter Plan Overview • DOE Stimulus fund application overview
3	10/7/2009	Stakeholder Collaborative	• Follow-up from PUC Technical Conference • Smart Meter IT Plan and sourcing overview • AMI sourcing overview • Customer testing and pricing programs
4	11/4/2009	Stakeholder Collaborative	• Stimulus update • Settlement discussion • Sourcing update • Customer testing and pricing programs update
5	12/3/2009	Stakeholder Collaborative	• Stimulus update • Project updates: Sourcing, IT • Customer testing and Dynamic Pricing Programs design update
6	1/13/2010	Stakeholder Collaborative	• Stimulus update • Project updates: Sourcing, IT • Review of 2009 Smart Meter expenditures • Customer testing and Dynamic Pricing Programs design update
7	2/26/2010	Stakeholder Collaborative	• Stimulus update • Sourcing update • Customer testing and Dynamic Pricing Programs design update
8	4/27/2010	Stakeholder Collaborative	• Project updates: Sourcing, IT • Dynamic Pricing programs • Review of Smart Meter project expenditures to date
9	8/12/2010	Stakeholder Collaborative	• Sourcing update • Vendor overview of network and meters (Sensus USA, Inc.) • Vendor justification overview • Program Management Organization overview • Budget overview and cost recovery update • Dynamic Pricing Program recommendation
10	2/10/2011	Stakeholder Collaborative	• Update on key milestones and success factors • Project updates: Sourcing, AMI deployment, Smart Grid, IT, Budget • DOE compliance reporting • Dynamic Pricing Program update • Cost recovery update
11	3/29/2011	PUC Briefing	• Update on key milestones and success factors • Project updates: Sourcing, AMI deployment, Smart Grid, IT, Budget DOE compliance reporting & cost reimbursement update • Dynamic Pricing Program update • Cost recovery update

No.	Date	Event	Key Discussion Topics
12/13	6/17/2011	PECO On-site Meter Shop Tour (Combined Stakeholders and PUC Staff)	• AMI station tour at PECO's Berwyn complex • AMI network and meter deployment updates • Paoli, PA tower gateway base-station site visit
14	11/17/2011	Stakeholder Collaborative	• Update on key milestones and success factors • Project updates: AMI deployment, Sourcing/Contracts, Budget Overview, Smart Grid, IT Systems, Data Security/Privacy, Dynamic Pricing Program, Partnerships, Cost Recovery • Future Meeting Topics/Next Steps
15	3/6/2012	PUC Briefing	• Update on key milestones and success factors • Project updates: Meter deployment, Smart Grid, IT, Budget, Dynamic Pricing Program, Data privacy, Partnerships • Low Income project - Customer Survey results
16	3/6/2012	Stakeholder Collaborative	• Update on key milestones and success factors • Project updates: Meter deployment, Smart Grid, IT, Budget, Dynamic Pricing Program, Data privacy, Partnerships • Low Income project – Customer Survey results
17	6/13/2012	PUC Briefing	• Project updates • Preview of Phase Two universal deployment filing • Remote Connect Disconnect (RCD) pilot
18	6/13/2012	Stakeholder Collaborative	• Project updates • Preview of Phase Two universal deployment filing • Remote Connect Disconnect (RCD) pilot
19	9/13/2012	PUC Briefing	• Summary of AMI events and corrective actions taken
20	10/23/2012	Stakeholder Collaborative	• Project updates • Preview of Phase Two universal deployment filing • Update on RCD pilot • Update on Web presentment
21	12/10/12	PUC Briefing	• AMI deployment update • Replacement of Sensus meters • Current cost estimates • RCD benefits and pilot results • Web presentment of meter data • Smart Grid update

Appendix C:

Estimated Cost-Benefit Analysis for Phase Two Smart Meter Deployment
($M as of January 18, 2013)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Phase Two Costs:											
AMI Deployment		$ (111.7)	$ (130.6)	$ (0.2)							$ (242.4)
IT Enablement	$ (0.4)	$ (17.9)	$ (15.6)	$ (0.1)							$ (34.0)
Business Integration	$ (0.1)	$ (3.3)	$ (2.2)								$ (5.7)
Total Phase Two Costs	**$ (0.6)**	**$ (132.9)**	**$ (148.3)**	**$ (0.3)**							**$ (282.1)**
Benefits:											
Avoided AMR Costs	$ 0.7	$ 4.8	$ 16.2	$ 30.2	$ 32.3	$ 32.3	$ 32.3	$ 32.3	$ 32.3	$ 32.3	$ 245.4
PECO Operational Savings		$ 1.1	$ 4.3	$ 6.9	$ 6.9	$ 6.9	$ 6.9	$ 6.9	$ 6.9	$ 6.9	$ 53.5
Customer (Societal) Benefits*		$ 0.8	$ 2.0	$ 3.4	$ 6.1	$ 6.1	$ 6.1	$ 6.1	$ 6.1	$ 6.1	$ 42.8
Total Benefits	**$ 0.7**	**$ 6.8**	**$ 22.4**	**$ 40.5**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 341.8**
Net (Cost) - Benefit	**$ 0.1**	**$ (126.1)**	**$ (125.9)**	**$ 40.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 45.2**	**$ 59.7**
$NPV_{7.0}$ of (Costs) - Benefits	**$ (17.7)**										

<u>Alternative</u> Phase Two Plan - (Proportionate Completion of Entire Service Territory by end of 2019)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Phase Two Costs:											
AMI Deployment		$ (27.7)	$ (41.9)	$ (40.4)	$ (40.4)	$ (40.4)	$ (40.5)	$ (21.4)			$ (252.6)
IT Enablement	$ (0.4)	$ (9.4)	$ (9.8)	$ (17.1)	$ (2.1)						$ (38.9)
Business Integration	$ (0.1)	$ (3.3)	$ (2.2)								$ (5.7)
Total Phase Two Costs	**$ (0.6)**	**$ (40.5)**	**$ (53.9)**	**$ (57.4)**	**$ (42.5)**	**$ (40.4)**	**$ (40.5)**	**$ (21.4)**			**$ (297.1)**
Benefits:											
Avoided AMR Costs	$ 0.7	$ 4.8	$ 8.0	$ 11.2	$ 14.4	$ 17.6	$ 20.8	$ 23.9	$ 32.3	$ 32.3	$ 165.9
PECO Operational Savings		$ 0.5	$ 1.3	$ 2.1	$ 3.0	$ 3.8	$ 4.7	$ 5.8	$ 6.9	$ 6.9	$ 35.0
Customer (Societal) Benefits		$ 0.3	$ 1.0	$ 1.8	$ 2.6	$ 3.4	$ 4.2	$ 5.2	$ 6.1	$ 6.1	$ 30.7
Total Project Benefits	**$ 0.7**	**$ 5.5**	**$ 10.3**	**$ 15.1**	**$ 20.0**	**$ 24.8**	**$ 29.7**	**$ 34.9**	**$ 45.2**	**$ 45.2**	**$ 231.5**
Net (Cost) - Benefit	**$ 0.1**	**$ (34.9)**	**$ (43.6)**	**$ (42.3)**	**$ (22.5)**	**$ (15.7)**	**$ (10.8)**	**$ 13.6**	**$ 45.2**	**$ 45.2**	**$ (65.6)**
$NPV_{7.0}$ of (Costs) - Benefits	**$ (75.9)**										

* Societal benefits are not included in revenue requirement estimates shown in Appendix D.

Appendix D:

Estimated Smart Meter Cost Recovery
($M as of January 18, 2013) [1]

($ millions)	2012 [2]	2013	2014	2015	2016	2017	2018	2019	2020	2021
Prior Period (Over)/Under Collection	$ 2.2	$ (9.4)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
O&M Expenses	16.4	27.3	31.9	29.7	29.5	30.0	30.9	31.8	32.8	33.8
Depreciation (incl. Accelerated AMR)	10.2	18.2	32.8	39.3	37.1	34.1	29.9	28.5	27.5	26.2
Capital Revenue Requirement [3]	10.5	11.6	27.4	32.9	30.6	28.2	31.6	32.5	31.5	28.6
Benefits and Avoided Costs	(0.9)	(5.9)	(20.4)	(37.1)	(39.1)	(39.1)	(39.1)	(39.1)	(39.1)	(39.1)
Revenue Requirement	**$ 38.4**	**$ 41.9**	**$ 71.7**	**$ 64.9**	**$ 58.1**	**$ 53.2**	**$ 53.3**	**$ 53.7**	**$ 52.6**	**$ 49.4**
Breakdown by Customer Class:										
R	36.6	38.0	64.8	58.6	52.5	48.0	48.1	48.5	47.5	44.7
SCI	4.0	3.8	6.8	6.1	5.5	5.0	5.0	5.1	5.0	4.7
LCI	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	$ 40.7	**$ 41.9**	**$ 71.7**	**$ 64.9**	**$ 58.1**	**$ 53.2**	**53.3**	**53.7**	**52.6**	**49.4**
Estimated Surcharge Rates [4]:										
R - (¢/kWh)	0.28	0.31	0.52	0.46	0.41	0.38	0.38	0.38	0.37	0.35
SCI - ($/cust./mo.)	$ 2.16	$ 2.27	$ 4.02	$ 3.62	$ 3.23	$ 2.95	$ 2.94	$ 2.95	$ 2.88	$ 2.70
LCI - ($/cust./mo.)	$ 2.15	$ 2.65	$ 4.02	$ 3.62	$ 3.23	$ 2.94	$ 2.94	$ 2.95	$ 2.88	$ 2.70
Avg. Customer Monthly Bill Impact:										
R - 500 kWh	$ 1.38	$ 1.53	$ 2.58	$ 2.31	$ 2.06	$ 1.88	$ 1.89	$ 1.90	$ 1.86	$ 1.75
SCI	$ 2.16	$ 2.27	$ 4.02	$ 3.62	$ 3.23	$ 2.95	$ 2.94	$ 2.95	$ 2.88	$ 2.70
LCI	$ 2.15	$ 2.65	$ 4.02	$ 3.62	$ 3.23	$ 2.94	$ 2.94	$ 2.95	$ 2.88	$ 2.70
Avg. Customer Annual Bill Impact:										
R - 500 kWh	$ 16.60	$ 18.30	$ 30.99	$ 27.77	$ 24.70	$ 22.60	$ 22.63	$ 22.80	$ 22.33	$ 20.99
SCI	$ 25.86	$ 27.28	$ 48.23	$ 43.48	$ 38.77	$ 35.35	$ 35.26	$ 35.40	$ 34.54	$ 32.36
LCI	$ 25.80	$ 31.84	$ 48.19	$ 43.43	$ 38.73	$ 35.31	$ 35.26	$ 35.40	$ 34.54	$ 32.36
Percent Impact on Total Customer Bill:										
R - 500 kWh	1.5%	1.9%	3.2%	2.8%	2.5%	2.3%	2.3%	2.3%	2.3%	2.1%
SCI	0.2%	0.2%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%
LCI	0.01%	0.01%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%

[1] Cost recovery estimates include Phase One + Phase Two costs and are net of Stimulus Grant Funding at approximately 48% of Gross Plant consistent with DOE Grant awarded to PECO (award No. DE-OE0000207).
[2] Reflects calculation for SMCRS estimates for the period January 1, 2012 to December 31, 2012 as filed with the PUC on Dec. 15, 2011.
[3] Reflects a 10% return on equity.
[4] Rates include impact of Gross Receipts Tax (GRT) of 5.9%.

Appendix E:

Estimated State Tax Flow Through Impact from Accelerated AMR Depreciation *

($M as of January 18, 2013)

	Actual Book Depreciation (1)	Recovered in Base Rates (2)	Accelerated Depreciation Under the Settlement Recovery over 10 yrs (3)	Tax Depreciation from Acceleration [1] (4)	Net Additional Book/Tax due to Acceleration (5) = (3) - (4)	Additional State Income Tax @6.5% (6) = (5) * 6.5%	Revenue Requirement (7) = (6)/(1-T/(1-GRT)
2010	$ 10.9	$ -	$ -			-	-
2011	$ 25.4	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2012	$ 29.1	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2013	$ 36.2	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2014	$ 8.7	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2015	$ -	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2016	$ -	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2017	$ -	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2018	$ -	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2019	$ -	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
2020	$ -	$ 10.0	$ 1.0	$ (0.4)	$ 1.4	$ 0.1	$ 0.2
Total	$ 110.3	$ 100.5	$ 9.8	$ (4.4)	$ 14.2	$ 0.9	$ 1.7

[1] Amortization of tax depreciation from acceleration (as shown in column 4 above) is developed as shown in the following table:

	Tax Depreciation Under Accelerated Depreciation	Tax Depreciation Included in Base Rates	Difference
2010	$ 5.7	$ 4.7	$ 1.0
2011	$ 7.0	$ 4.7	$ 2.3
2012	$ 8.8	$ 4.7	$ 4.1
2013	$ 13.6	$ 4.7	$ 8.8
2014	$ 12.3	$ 4.7	$ 7.6
2015		$ 4.7	$ (4.7)
2016		$ 4.7	$ (4.7)
2017		$ 4.7	$ (4.7)
2018		$ 4.7	$ (4.7)
2019		$ 4.7	$ (4.7)
2020		$ 4.7	$ (4.7)
Total	$ 47.3	$ 51.8	$ (4.4)
		Amortized over 10 years =	$ (0.4)

* Note: All figures shown in Appendix E are latest estimates and are for illustrative purposes only.

EXHIBIT 5b

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PECO ENERGY	:	
COMPANY FOR APPROVAL OF ITS	:	
SMART METER TECHNOLOGY	:	**DOCKET NO. M-2009-2123944**
PROCUREMENT AND INSTALLATION	:	
PLAN	:	

VOLUME II OF II

PECO EXHIBIT 1

SMART METER TECHNOLOGY PROCUREMENT AND INSTALLATION PLAN

August 14, 2009

PECO EXHIBIT 1

SMART METER TECHNOLOGY PROCUREMENT AND INSTALLATION PLAN

DOCKET NO. M-2009-2123944

PECO

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1. Executive Summary

PECO Energy Company ("PECO" or the "Company") is proposing to implement a smart meter technology procurement and installation plan pursuant to the requirements of Act 129 of 2008. PECO refers to this as its "Smart Meter Plan." This document describes PECO's Smart Meter Plan and how PECO intends to implement it.

PECO's Smart Meter Plan calls for the design, procurement, deployment, and operation of inter-related smart meter systems. These systems will ensure that PECO meets the program requirements of the Pennsylvania Public Utility Commission ("Commission" or "PUC"), including all of the smart meter functional capabilities enumerated in the Commission's Implementation Order. *See Smart Meter Procurement and Installation,* Docket No. M-2009-2092655 (order entered June 24, 2009) ("Implementation Order"). PECO is not seeking a waiver at this time for any of the non-statutory requirements.[1]

While the design and deployment of Smart Metering systems is complex and costly, PECO has endeavored to develop a prudent and well-structured Smart Meter Plan to manage cost and risk. This Plan mitigates cost risks through a disciplined procurement process that leverages purchasing power across Exelon operating units. The Plan mitigates technology risk through various levels of acceptance testing. The Plan mitigates organizational and business process risk through reasonably paced initial and universal deployment phases. Finally, the Plan mitigates customer risk by implementing an initial dynamic pricing and customer acceptance program to educate customers and gain insight into how customers will utilize new pricing options.

[1] PECO has filed an Energy Efficiency and Conservation Plan ("EE&C Plan") with the Commission containing both energy efficiency and demand response programs. See Docket No. M-2009-2093215. Those programs are not dependent on PECO's Smart Meter Plan.

PECO proposes to implement this Smart Meter Plan using a two-phase process (see Plan Approval Process Timeline below). The first phase ("Phase One") will focus on the selection of the Smart Meter technology to be deployed, the implementation of a meter data management system ("MDMS") and other information technology ("IT") investments, the testing and validation of the Smart Meter technology and the deployment of the advanced metering infrastructure ("AMI") communication network (see Table 1). Phase One also involves the deployment of Smart Meters in controlled quantities and the development and implementation of a program to test dynamic pricing and customer acceptance. The second phase ("Phase Two") will complete the deployment of Smart Meters across the PECO service territory.

PECO's Smart Meter Plan will be implemented through three major filings for PUC approval with the Commission (see Table 2) and a separate, but contemporaneous, grant application with the U.S. Government pursuant to the American Recovery and Reinvestment Act ("ARRA" or "Stimulus Act"). First, PECO is making an initial filing with the Commission to establish its Smart Meter Plan and gain approval for its Smart Meter technology procurement processes, including the procurement of an initial quantity of AMI meters, AMI network, communications networks, MDMS, Middleware, and System Integration investments. Second, PECO plans to file in June 2010 for Commission approval of an initial dynamic pricing and customer acceptance program. Third, PECO will file in 2012 for approval of a universal meter deployment plan for its remaining customers.

In conjunction with its Act 129 filing to the Commission, PECO also is seeking a federal Stimulus grant. On August 6, 2009, PECO filed a Smart Grid Investment Grant with the Department of Energy for $200 million to mitigate the net costs of PECO's Phase One smart meter investment costs and to enable the acceleration of the deployment of PECO's Smart Meter

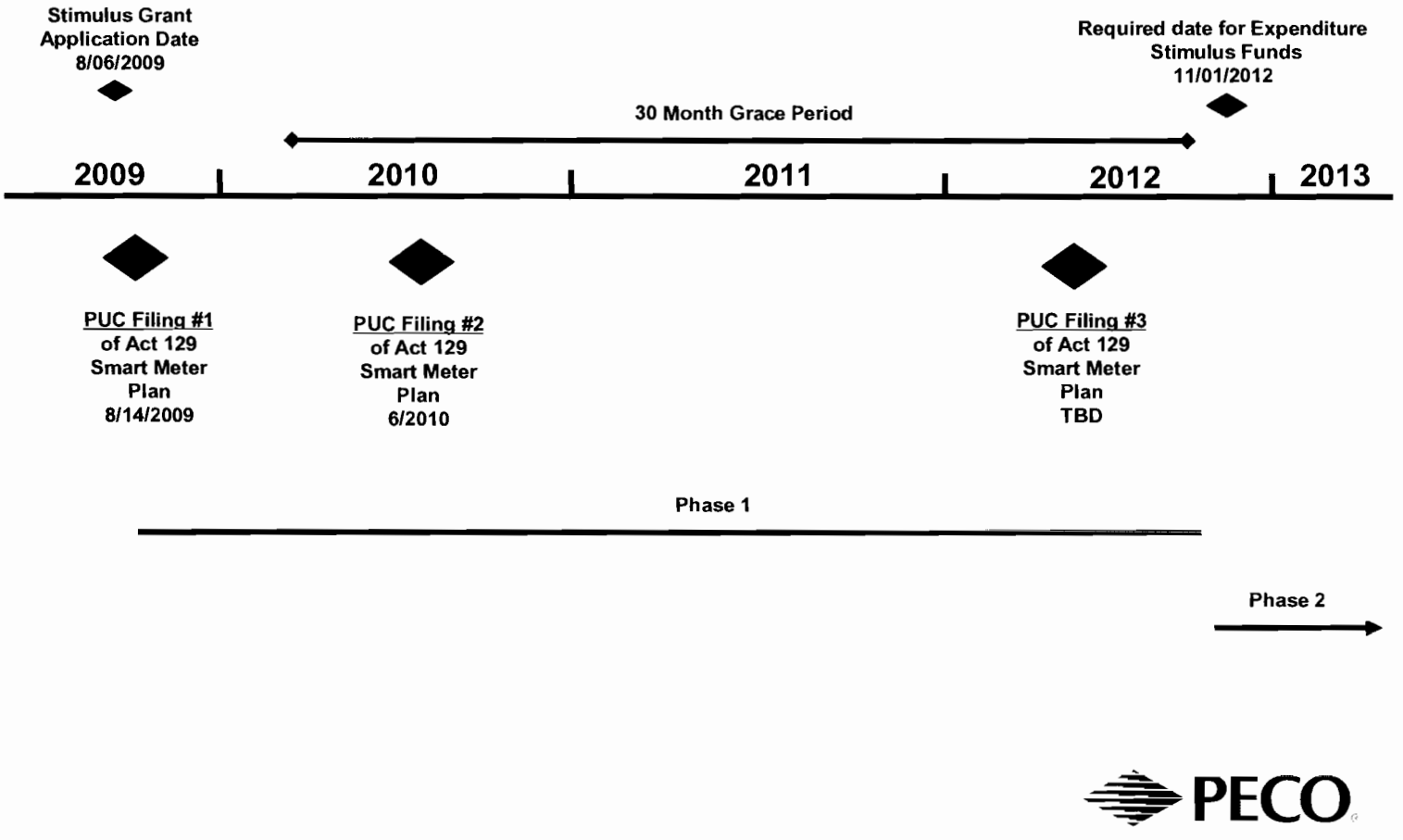
system. Stimulus Act funding would allow for an expanded initial deployment of up to 600,000 meters and universal deployment in 10 years.

As discussed in the Implementation Order, electric distribution companies ("EDCs") are entitled to recover reasonable and prudent costs of providing smart meter technology less any savings in operating expenses and capital costs realized by the EDC from deploying the smart meter technology. EDCs may also seek recovery of stranded costs through an accelerated depreciation schedule. The costs of PECO's Smart Meter Plan have been carefully estimated. The preliminary cost estimate for Phase One of PECO's Smart Meter Plan for an initial deployment of 100,000 meters is $210 million and $290 million for 600,000 meters, with a range of $125 to $225 million and $210 to $300 million, respectively. Preliminary cost estimates for the full implementation of the Smart Meter Plan range from $500 million to $550 million.

PECO seeks approval from the Commission for all of the Plan's Phase One costs. In 2012, PECO intends to seek approval from the Commission to recover costs for the universal meter deployment. The Company is proposing to recover the net costs of its Smart Meter Plan through a reconcilable surcharge under Section 1307 of the Public Utility Code.

PECO

Plan Approval Process Timeline



PECO

2. The PECO Smart Meter Plan

Act 129 requires EDCs to file with the Commission, by August 14, 2009, a smart meter technology procurement and installation plan. The Act defines minimum smart meter technology capabilities and provides for cost recovery of all prudent and reasonable costs. In June 2009, the Commission issued an Implementation Order detailing plan requirements, including key milestones that should be addressed. The Implementation Order describes Smart Meter Plan functional requirements, some of which are not enumerated in the Act. The Implementation Order allows EDCs to request waivers of the non-statutory requirements that are not cost-effective. The Implementation Order also provides for a 30-month grace period for installation of a smart meter network and guidance on EDC smart meter technology cost recovery.

PECO has developed a Smart Meter Plan that is consistent with the requirements of Act 129 and the Implementation Order. The Plan supports all of the key smart meter technology capabilities identified by the Implementation Order. PECO does not seek a waiver at this time of any of the non-statutory requirements set forth in the Commission's Order.

2.1 AMI System Components Overview

A complete AMI system is comprised of several component subsystems. The table below defines the key categories of components that form an AMI system.

Table 1: AMI System Component Definitions

Term	Definition
AMI Network	Comprised of: 1) Network components (collectors, routers, and repeaters) that connect smart meters to the AMI Host computers via higher capacity communications transport technologies 2) AMI Host, which are computers that act as the network controller.
Communications Network(s)	Comprised of: 1) Core Foundation Network, which is a higher capacity transport from the AMI Network to the AMI Host 2) Additional communications solutions that bridge between the AMI Network and the Core Foundation Network when necessary.
MDMS	The Meter Data Management System which: 1) Serves as a repository for meter interval usage data and meter event data. 2) Performs validation, editing, and estimating (VEE) operations on raw data to allow it to be used for billing purposes.
Middleware	Standard software components that manage the integration of: 1) The AMI Host with the MDMS 2) The MDMS with IT "Back Office" systems to perform customer billing, outage management, and other critical business functions.
System Integration	IT professional services that are engaged in the analysis, design, build, test, and deploy phases of the integration of the AMI Host, MDMS, Middleware, and IT back office systems.
Meters	The physical smart meter end points that are used to record and store interval usage data and events and communicate to the AMI Network.

2.2 PECO's Smart Meter Plan Development

To develop the Smart Meter Plan, PECO undertook a disciplined and detailed assessment of various technology and deployment options to meet Act 129 and Implementation Order

requirements. Many alternative technology and deployment options were identified and analyzed, from adaptation of the AMR system currently in use by PECO to a complete replacement of PECO's AMR systems with new AMI technology.

PECO's Plan development process included designating functional work teams and subject matter experts, as well as coordination with PECO's energy efficiency and conservation ("EE&C") working team and subject matter experts on distribution system communication enhancements. The Plan development process was supported by consultants with unique expertise and knowledge in the development of Smart Meter strategies and systems, and involved internal workshops, stakeholder review sessions, an AMI technology symposium in Harrisburg, and workshops with several leading AMI system vendors. In addition, PECO's current meter operations outsourcing contractor was consulted to identify transition issues. The resulting Smart Meter Plan reflects this extensive research, assessment and outreach effort.

Ultimately, this examination revealed that PECO's current AMR system would not meet the Act 129 and Implementation Order requirements. The examination also identified certain common elements which form the core of PECO's Smart Meter Plan: (a) the deployment of a new two-way AMI network that enables Smart Meter functionality, (b) the creation of the information technology systems and information handling capabilities to support this network and the expanded data flow, including MDMS, (c) the purchase and installation of the new Smart Meters required to initiate the customer deployment of the Smart Metering technology, and (d) the importance of educating customers about dynamic pricing options.

2.3 PECO's Smart Meter Plan Schedule and Phasing

PECO proposes to implement its Smart Meter Plan in two phases. The first phase -- Phase One -- will begin with a thorough technology contracting process to select, negotiate, and

contract for the discrete elements that will make up PECO's Smart Meter technology. Phase One also will include the setup and technology acceptance testing of the selected new AMI technology to ensure proper performance of the technology prior to broader deployment. Once the technology acceptance testing is complete, an initial dynamic pricing and customer acceptance program will be launched to test dynamic pricing options, educate customers about those options, and collect data from customer experience with dynamic pricing. Finally, Phase One will provide for the deployment of the new AMI network across the PECO service territory and the initial installation of Smart Meters. The pace and number of Smart Meters in the Phase One deployment will be affected directly by the availability of Stimulus grant funds to finance accelerated deployments. At a minimum, Phase One will include the procurement and deployment of 100,000 meters, but this figure may be increased up to 600,000 meters if full requested Stimulus funds are received.

PECO's goal is to begin implementing Phase One in late 2009. Specifically, PECO expects to begin procurement activities immediately following the first Commission filing and projects the design work on the MDMS will begin in late 2009. Once approved by the Commission, the MDMS application and system will be installed and is expected to be operational by the summer of 2011. In order to achieve the most cost-efficient procurement of the supporting IT systems, PECO intends to leverage the competitively sourced MDMS, Middleware, and Systems Integration providers currently supporting the development of Exelon's AMI programs. Leveraging this MDMS platform will help ensure that PECO's aggressive implementation schedule can be achieved.

PECO projects technology acceptance testing of the AMI communications network will begin in late 2010. IT system, metering, and AMI network technology acceptance testing is

expected to take approximately 12 months. Full AMI network deployment will begin in late 2011, and the network is expected to be fully operational by early 2012, in advance of the end of the 30-month grace period. PECO's goal is to deploy the field AMI communications network in a way that will allow customers throughout the service territory to access Smart Meter capabilities. This is necessary to accommodate the Act 129 requirements to deploy Smart Meters upon customer request or in new construction after the conclusion of the grace period.

During Phase Two of PECO's Smart Meter Plan, Smart Meters will be installed throughout the PECO service territory where meters were not changed out during Phase One. The specific schedule of the deployment for the remaining Smart Meters is not finalized at this time and will be based, in part, on the lessons learned from Phase One and the outcome of PECO's Stimulus grant application. If DOE fully funds PECO's grant request, PECO will deploy up to 600,000 Smart Meters during Phase One, thus reducing the number of meters remaining to be changed out during universal deployment. PECO plans to finalize deployment in a separate filing with the PUC towards the end of the 30-month grace period established in the Implementation Order.

2.4 Future Elements of PECO's Smart Meter Plan

Implementing such a complex technology and deployment program as contemplated in PECO's Smart Meter Plan represents a significant organizational commitment and large investment. While the core elements of PECO's Smart Meter Plan have been determined, certain details have not been finalized. In the interest of diligence and prudency, PECO is deferring some decisions (see Table 2), including:

- The selection of the specific Smart Meter technology to be deployed. This includes the specific AMI network as well as the compatible Smart Meters that interface with

the network. As discussed above, this selection forms a critical part of Phase One of PECO's Smart Meter Plan. A comprehensive procurement process will support the selection of the AMI and Smart Meter technology vendors.

- The timing and planning for universal change-outs of AMR electric meters with Smart Meters. The specifics of this aspect of Phase Two of the Plan will be influenced by access to Stimulus grant funds; actual cost experience of deploying, operating and maintaining the new Smart Meter network and associated IT systems; considerations for potential stranded assets arising out of transitioning from PECO's current AMR System; and PECO's operational capacity to manage the mass deployment.
- The business ownership structure to be employed. PECO currently uses a managed services outsourcing agreement for its meter reading services. Under this agreement, the outsourcing contractor owns and maintains the communications network. PECO currently intends to own its AMI system, but is evaluating options for the operation and maintenance of the network.

PECO is also evaluating what will be done with respect to gas meters, as the gas meters are currently supported by the AMR metering system. To the extent that PECO deploys new gas meters, those procurements, the associated costs and cost recovery will be addressed in a separate proceeding.

2.5 Commission Filings and Other Approval Actions

PECO anticipates implementing Phases One and Two of it Smart Meter Plan with three major Commission filings and a separate Stimulus grant application to the Department of Energy. Phase One of PECO's Smart Meter Plan will be implemented through the first two

major Commission filings, as well as through the Stimulus grant application submitted on August 6, 2009. Phase Two will be launched through the third Commission filing.

PECO's Stimulus grant application requests funding for its MDMS, AMI network and initial meter deployment. DOE expects to notify potential grantees of its decisions before the end of 2009. The table below summarizes the specific approvals sought from the Commission for each phase.

Table 2: Commission Filings and Approvals

Filing and Approximate Date	Phase of Smart Meter Plan	Approvals sought
Filing 1: Smart Meter Technology Procurement and Installation Plan, 8/14/09	Phase One	PECO seeks Commission approval of its Smart Meter Technology Procurement and Installation Plan, including: • AMI Network • Communication Network • MDMS • Middleware • Systems and Integration • Initial Deployment of up to 600,000 Smart Meters • Cost Recovery Mechanism
Related Approvals, Q4 2009	Phase One	PECO will seek Commission approval of proposed contracts with MDMS, Middleware, and Systems Integration vendors
Related Approvals, Q1 2010	Phase One	PECO will seek Commission approval of proposed contracts with AMI technology vendors
Filing 2: Initial Dynamic Pricing and Customer Acceptance Program, 6/2010	Phase One	PECO will seek Commission approval of programs to implement initial dynamic pricing options, educate customers and assess customer acceptance of dynamic

		pricing programs
Filing 3: Universal meter deployment schedule, 2012	Phase Two	PECO will seek Commission approval of Smart Meter universal meter procurement and deployment

PECO has proposed the foregoing approach to meet PUC deadlines and ensure both an orderly process and risk mitigation associated with Smart Meter technology deployments. Consequently, the Phase One MDMS system implementation and the selection and technology acceptance testing of the AMI network must proceed without delay. Phase One also will allow PECO to design and implement, through a collaborative process described in Section 5.6, initial dynamic pricing options, and a program to educate customers about those options and collect data about customer experience with dynamic pricing. Finally, Phase One ensures that PECO can validate the performance and reliability of the new Smart Meter technology and become proficient in the use of the new AMI system prior to its wider use for large numbers of PECO customers.

For Phase Two, PECO will evaluate the lessons learned from Phase One to develop its universal meter deployment proposal. Specifically, the initial deployment stage will inform Phase Two decisions concerning the appropriate design and pace of the mass deployment. Also, given the ongoing evolution of AMI technology, PECO's proposed two-phase approach enables it to take advantage of Smart Meter product improvements prior to final, large-volume purchases, and to explore cost-saving purchase opportunities at the corporate level. Since the Smart Meters represent as much as 85-90% of the capital costs associated with the AMI system (not counting IT investments), cost savings resulting from a larger purchase may be significant. See Section 6.2 below.

2.6 Vendor Selection and Contracting Process

PECO will engage in a careful and thorough process to select the vendors who will support the implementation of the Smart Meter Plan. A disciplined, competitive selection and contracting process is important as PECO anticipates that several different contracts will be executed, including the following scopes of work: (1) purchase, design, install and train support for the AMI network; (2) build out PECO's communications network to link the AMI network to PECO's data center; (3) install Smart Meters; and (4) support program management. In addition, PECO anticipates that it will negotiate and amend existing contracts in order to: (1) license, install, configure and support the MDMS; (2) implement and support IT "Middleware"; and (3) support system integration activities.

As an initial step in this process, PECO has conducted workshops with some of the key vendors of Smart Metering technology. These workshops are described in detail in Section 2.9 of this Plan. In addition, as further detailed in Section 5.2, PECO intends to leverage the competitively sourced MDMS, Middleware, and System Integration providers currently supporting the development of Exelon's AMI programs.

2.7 IT Systems Deployment and Integration Overview

A critical part of PECO's Smart Meter Plan is the successful implementation of the IT Systems Plan described in Section 5.3. The IT System Plan represents a large investment, occurs early in the process, and must be completed in time to support PECO's customers using Smart Meters. This last item is of particular importance to PECO's initial Commission filing; without timely approvals it may not be possible to make the necessary changes, including the installation of the MDMS, in a timeframe sufficient to meet other components of the Plan.

The IT Systems Plan is a multi-phase program within the Smart Meter Plan, involving five successive "releases" of IT systems. The first release includes the installation, commissioning and integration of a MDMS. The second release will include the necessary integration of the MDMS and PECO's Customer Information Systems to enable accurate and effective billing. The third release of the intended IT systems implementation involves the development of web presentment, data analytics capabilities, and any needed changes to PECO's EDI transaction capabilities. As part of the fourth release of the IT System implementation, the remote customer control and in-home display aspects of the Smart Metering technology will be enabled. Finally, in the fifth planned release, the further integration and modification necessary to integrate the MDMS to PECO's outage management system and other operational support systems will be completed.

2.8 Consistency with Industry Standards

It is important that PECO's Smart Meter Plan and its selected technologies meet best practices and industry standards. There is a proliferation of standards, which affects all levels of the AMI and Smart Meter system, from the physical layer of hardware, to the transport, network and application layers involving interaction of software systems. Many standards have already been developed which influence the design of the Smart Meter itself. Some provide guidance on the communication to and from the network and the meter, while others address the growing issues around security and access.

Part of the growing interest in standards is to ensure that "open" standards and systems are broadly deployed. This will enable vendors, utilities and third parties to access innovative products and capabilities, providing ever-increasing and valuable communication and data services. At the same time, the emphasis on "open" standards has also energized concerns

around security of the metering systems.

Current commercial vendors and utility stakeholders are working through several industry and governmental bodies to develop common standards for "open" systems communications. One of the most important current efforts is being conducted by the National Institute of Standards and Technology (NIST). The Energy Independence and Security Act of 2007 (EISA) authorized NIST to establish and publish an interoperability framework for the smart grid. PECO is participating in this effort. NIST aims to establish a framework of concepts, principles, processes and models that will help promote the interests of smart grid interoperability across the entire spectrum of smart grid devices, uses and users. Once NIST completes its work, the Federal Energy Regulatory Commission intends to institute a rulemaking to review and, hopefully, adopt the NIST standards and protocols as may be necessary to "insure smart-grid functionality and interoperability in interstate transmission of electric power, and regional and wholesale electricity markets."[2]

By Fall 2009, the NIST process is expected to deliver (a) smart grid architecture; (b) priorities for interoperability and cyber security standards; (c) an initial set of standards to support implementation; and (d) plans to meet remaining standards as needed. The initial list of standards is included in the table below.[3]

PECO is fully supportive of this effort, and PECO will incorporate all applicable inter-operability, security, and performance standards as called for in the PUC Implementation Order and any applicable published standards generated by the NIST effort described above.

[2] EISA Section 1305(d).

[3] NIST recognizes that these standards will require further development and that many additional standards and specifications are needed to achieve interoperability of Smart Grid devices and systems.

Table 3: Initial List of NIST Standards

Standard	Application
AMI-SEC System Security Requirements	Advanced metering infrastructure (AMI) and Smart Grid end-to-end security
ANSI C12.19/MC1219	Revenue metering information model
BACnet ANSI ASHRAE 135-2008/ISO 16484-5	Building automation
DNP3	Substation and feeder device automation
IEC 60870-6 / TASE.2	Inter-control center communications
IEC 61850	Substation automation and protection
IEC 61968/61970	Application level energy management system interfaces
IEC 62351 Parts 1-8	Information security for power system control operations
IEEE C37.118	Phasor measurement unit (PMU) communications
IEEE 1547	Physical and electrical interconnections between utility and distributed generation (DG)
IEEE 1686-2007	Security for intelligent electronic devices (IEDs)
NERC CIP 002-009	Cyber security standards for the bulk power system
. NIST Special Publication (SP) 800-53, NIST SP 800-82	Cyber security standards and guidelines for federal information systems, including those for the bulk power system
Open Automated Demand Response (Open ADR)	Price responsive and direct load control
OpenHAN	Home Area Network device communication, measurement, and control
ZigBee/HomePlug Smart Energy Profile	Home Area Network (HAN) Device Communications and Information Model

2.9 Smart Meter Vendor Workshops

To ensure that PECO had a proper understanding of the Smart Meter vendor marketplace, workshops were held with a number of key Smart Meter solution providers. The workshops included technical discussions and commercial topics, including high-level cost estimates for the implementation of a complete Smart Meter solution that complies with Act 129 and meets

PECO's needs across its service territory.[4] During the workshops, the AMI and Smart Meter vendors provided detailed information about technology solutions and estimated costs. Vendors also discussed preferred commercial terms. As a result of the workshops, PECO concluded that the Smart Meter vendor community can support PECO's technical requirements and that viable options exist to implement Smart Meter technology in PECO's service territory. Thus, the workshops were successful in affirming PECO's technical assessments and providing PECO with vendor-based pricing to be used in PECO's financial planning. Finally, the workshops confirmed that PECO could not use its current AMR system to meet all of the PUC's smart meter requirements.

[4] These workshops were held at PECO's Philadelphia main office building from June 2, 2009 through June 5, 2009. Four hours were provided for each workshop with the format consisting of vendor presentations with follow-up question and answer sessions.

3. PECO's Current Metering Systems

PECO currently utilizes a radio frequency ("RF") network to remotely read most of its electric and gas meters. This AMR system is a one-way communication system whereby the meter's radio communicates to the fixed, pole-mounted radio network, which in turn feeds data to a centralized, remote control point. This network is owned, operated and maintained by Landis+Gyr ("L+G"), PECO's outsourcing meter reading and meter operations contractor. Today, 1,788,000 of PECO's electric and 531,000 of PECO's gas meters are operated under this network.[5] The network is often referred to as the "Cellnet" network because Cellnet was the name of the original company that developed, sold and supported the system.[6]

In addition to those meters operated as part of the Cellnet network, approximately 12,000 electric meters are read by a vehicle-based metering system in those parts of PECO's service territory where the fixed radio network is cost-prohibitive to install and maintain. These meters are located in York County, Pennsylvania and in other distant areas of PECO's service territory. Secondly, PECO operates and maintains an MV-90 telephone-based electric metering system for approximately 1,600 large electric commercial and industrial customers (3,200 "MV-90" meters).

In addition to these vendor systems, PECO's internal staff supports various meter reading and meter operation activities. PECO's staff is responsible for adding meters and customers to the PECO system, dealing with customer "churn" as customers move or leave the system, and managing the outsourcing contractor L+G. It also manages the MV-90 system.

[5] The number of actual meters varies from month to month based on new construction growth and other factors. The values reported here are estimated rounded to the nearest 1000s.

[6] PECO entered into a long-term agreement for construction and operation of its AMR network with Schlumberger RMS and Cellnet Data Systems ("Cellnet") for Cellnet's proprietary AMR technology. Schlumberger later sold the Cellnet company assets to a third party who in turn sold the company to Landis+Gyr in 2006.

L+G manages a field services organization that ensures the maintenance and support of the AMR network, AMR meters and AMR gas modules. It also provides manual meter reads for those meters not covered by the AMR fixed network.

PECO owns some of its electric and all of its gas meters. The balance of the electric meters and all of the AMR electric and gas radios are owned or otherwise provided by L+G . This ownership structure is an important element of the current AMR outsourcing arrangement and has important organizational and cost implications that PECO must consider in the timing and pace of the transition to AMI and Smart Meter systems.

PECO installed its AMR network from 1999 to 2003. The deployment and use of this system has enabled PECO to outsource its manual meter reading by way of a long-term managed services contract; has improved read accuracy; and has increased the number of actual versus estimated reads. At the time of its deployment, PECO's AMR network was "state of the art" and reflected PECO's commitment to thought and technology leadership within the electric and gas utility industry. It continues to provide effective and reliable metering services.

In sum, PECO has successfully implemented and managed the AMR outsourcing approach and this has led to many operational benefits, including cost reductions associated with the elimination of manual meter reading. Table 4 below identifies the metering and meter operation benefits PECO has already realized through its AMR implementation.

Table 4: AMR System Benefits

AMR System Capability	AMR System Benefits Descriptions
Remote Meter Reading	• daily readings obtained for all meters read through the AMR system • reduced estimated customer bills • Web presentment of customer interval data
Outage Detection	• identify outages as they occur • verify that power has been restored
Theft Detection and Tamper Notification	• dispatch field personnel quickly to investigate and repair tampered meters • minimizes electric service theft
Advanced Data Analysis	• supports electric load and usage studies • supports improved maintenance programs

Although PECO's AMR system is robust, it cannot support the suite of smart meter functionalities required by Act 129 and the Implementation Order. In addition, the current system has limitations affecting the design of PECO's proposed EE&C programs. A new infrastructure is necessary to deliver required functionalities and support future EE&C efforts. Therefore, PECO has planned to install a new AMI infrastructure.

4. Description of PECO's Proposed Smart Meter System

4.1 Introduction & Overview

PECO's Smart Meter Plan is designed to comply with Act 129 and the Implementation Order in a way that optimizes functionality, costs, schedule, organizational capacity, vendor capacity, and the mitigation of associated risks in each area. PECO is confident that its Plan meets Act 129 requirements and balances these considerations in a way that protects PECO's customers and investors.

The Implementation Order identified various capabilities – including several required by Act 129 – that smart meter technology should support. The goal of PECO's Smart Meter Plan is to incorporate *all* of these capabilities, beginning with the implementation of a Smart Meter system starting in 2010. The Plan is to first deploy the core IT systems needed to support Smart Meter integration, complete AMI technology acceptance testing in 2011, and put the Smart Meter communications network layer in place by early-2012, with deployment of individual Smart Meters to follow.

PECO's Smart Meter system will be comprised of several inter-dependent, coordinated systems, including:

- An AMI network
- Communications networks
- A MDMS to process and manage Smart Meter data
- Middleware
- System Integration, and
- Smart Meters

4.2 Current Capabilities of Smart Meter Vendors and Systems

PECO surveyed currently offered Smart Meter and AMI systems to determine commercially available and leading edge vendor capabilities. Most of the capability requirements described in the Implementation Order are base capabilities of commercially available Smart Meter systems. Some of the remaining capabilities represent options or enhancements to Smart Meter AMI systems, but none represent capabilities that are in the research stage of development.

It is important to note that some of the capabilities identified in the Implementation Order are enabled indirectly through other system capabilities. For example, "[a] minimum of hourly reads delivered at least once per day"[7] is enabled on all systems to meet a variety of Time-of-Use ("TOU"), Demand, Critical Peak Pricing ("CPP") and interval measurement needs and requirements.

These capabilities will provide the basis for PECO's vendor selection process as it seeks a specific vendor AMI solution. Of greatest importance and priority will be ensuring compliance with Act 129 and Commission Implementation Order requirements. Furthermore, PECO anticipates that all of the "base" system capabilities will be included in its eventual selection.

4.3 Transition from PECO's Current AMR System

PECO evaluated whether the current AMR system was capable of meeting the Act 129 and Implementation Order requirements. In addition to technical considerations, commercial and contractual services considerations were reviewed and will be important in the planning for careful transition to any new Smart Meter system.

[7] Implementation Order at 16.

4.4 Making Data Available to Customers

Act 129 requires that the Smart Meter Technology provide customers with direct access to and use of price and consumption information. It also requires that customers be provided with information on their hourly consumption and that the system enable time-of-use rates and real time pricing programs.

An important consideration is the specific means that energy use and pricing data will be made available to customers, from what source, the level of validation or quality of the data, the frequency of transmission, and the nature of customer interaction with the data. The answers to these questions will depend on the specific purposes served by the information and will not be known until PECO collects the data from its initial dynamic pricing and customer acceptance program.

To ensure that it can evaluate various in-home networking options, PECO will equip each of the Smart Meters with a Home Area Network (HAN) radio. The Zigbee Smart Energy Profile communications protocol is a leading HAN protocol used in Smart Meters today and is supported by the NIST standards activity.

PECO's initial EE&C Plan is not dependent on the Smart Meter technology. Future EE&C programs, however, may consider leveraging AMI networks and Smart Meter capabilities in a variety of ways. This may include AMI network-based direct load control of air conditioners and hot water heaters, "super peak" TOU rate structures, real time pricing and critical peak pricing programs, and peak time rebate programs.

5. Implementation Plan

5.1 Overview and Key Milestones

PECO's Smart Meter Plan will be implemented in two complementary phases. Phase One will include all technology and vendor selection activities, IT Systems implementation, technology acceptance testing, AMI Network deployment, and deployment of initial Smart Meters. Phase One will also include PECO's initial dynamic pricing and customer acceptance program. Phase Two of PECO's Smart Meter Plan will include the universal deployment of Smart Meters. The timeline of the significant steps in this Smart Meter Plan is depicted in the chart attached as Appendix 1. The schedule for the completion of the universal deployment is not indicated in the timeline.

Table 5: Key Activities in PECO's Smart Meter Plan

Phase	Activity	Description	Start Date	End Date
One	Technology Selection and Contracting	Vendor Selection, Negotiation, Contracting	Aug 2009	Apr 2010
One	IT Systems	Analyze, Design, Build, Test, Deploy 5 System Releases	Sep 2009	Jan 2012
One	Technology Acceptance Testing	Procure, Deploy, Shop Test, Field Test, Acceptance of AMI and Smart Meter Technology	Sept 2010	Sep 2011
One	Deployment of AMI Network	Procure and install the new AMI network across all PECO service territory	Oct 2011	Mar 2012
One	Initial Meter Deployment	Procure and install the initial Smart Meters	Oct 2011	Aug 2012
One	Develop and Launch Initial Dynamic Pricing and Customer Acceptance Program	Implement initial dynamic pricing options, educate customers and assess customer acceptance of dynamic pricing programs	Dec 2011	Dec 2013

Two	Universal Deployment	Begin universal deployment of Smart Electric Meters	Aug 2012	TBD[8]

PECO's Smart Meter Plan addresses the specific activities required for successful design, procurement, testing and deployment of Smart Meter technologies, including a plan for meeting the following milestones (as required by the Implementation Order):

Table 6: Implementation Order Milestones

Implementation Order Milestone	Smart Meter Plan section
Assessment of needs and technological solutions	Section 5.2 Technology Selection and Contracting
Selection of technologies and vendors	Section 5.2 Technology Selection and Contracting
Establishment of network designs	Section 5.4 Technology Acceptance Testing
Establishment of plans for training personnel	Section 5.5 Initial System Deployment
Establishment of plans for installation, testing and rollout of support equipment and software	Section 5.3 IT Systems Deployment and Integration Plan
Installation, testing and rollout of support equipment and software.	Section 5.3 IT Systems Deployment and Integration Plan
Establishment of plans to design, test and certify EDI transaction capability consistent with this order.	Section 5.3 IT Systems Deployment and Integration Plan
Establishment of plans for installation of meters consistent with the rollout requirements described below.	Section 5.5 Initial System Deployment & Section 5.7 Universal Deployment of Smart Meters

PECO's Smart Meter Plan is supported by a project plan that considers all the pertinent aspects of this complex program. The project plan also supports PECO's application for ARRA Stimulus grant funds.

[8] The end date for universal deployment of Smart Meters is expected to be no later than 15 years from plan approval. Implementation Order, p. 15. However, if PECO receives full funding of its federal Stimulus grant application, PECO will advance the schedule of Smart Meter deployment and complete universal deployment within 10 years.

5.2 Technology Selection and Contracting

Implementation activities associated with Phase One of the Smart Meter Plan will begin with the conducting of a thorough technology selection and contracting process to properly assess the needs and technological solutions available. PECO's planned procurement process will select, negotiate, and contract for the discrete elements that will make up PECO's Smart Meter technology (see Table 1). PECO anticipates several different contracts will support Plan implementation, including:

- A contract with a leading AMI system provider for the purchase, design, installation, initialization and training support for the AMI network. This contract will include a contract for system software support.
- Contracts necessary for PECO to complete the communication network. This network will enable the AMI communication network to link to PECO's data center.
- Contracts with leading Smart Meter manufacturers for the provision of AMI network-compatible Smart Meters.
- Various contracts for the installation of Smart Meters from time to time. The duration and nature of these contracts will depend on the pace and volume of the Smart Meter initial and universal deployment plans.
- Contracts to support the program management of the Smart Meter Plan. This may include, for example, the provision of consulting, program management, or other organizational "change management" services.
- An amended contract with Exelon's selected MDMS provider for the licensing, installation, configuration, and on-going support of its MDMS.

- An amended contract with PECO's current provider for the implementation and on-going support of PECO's IT system "middleware" that will serve as a PECO enterprise information "bus" for the management and integration of the various IT applications and metering information.
- An amended contract for systems integration activities.

In order to achieve the most cost-efficient procurement of the supporting IT systems, PECO intends to leverage the competitively sourced MDMS, Middleware, and Systems Integration providers currently supporting the development of Exelon's AMI programs. This approach provides cost savings through "re-use" of System Integration components (i.e., integration of MDMS and CIS (Customer Information System) data, use of enterprise-wide application platform), thus eliminating the need to purchase and develop two independent systems to support Exelon's AMI systems. In addition, ongoing operations and maintenance expenses would be reduced through a common enterprise license, lower contract costs for technical support, and lower internal project and general management costs. Through direct negotiations with these suppliers, PECO will seek to amend the Exelon agreements to integrate the PECO requirements to support Smart Meter deployment while also securing volume-based cost discounts as a result of an Exelon-wide approach.

In addition to facilitating the base Smart Meter Plan, this leveraged procurement strategy will also enable an accelerated deployment schedule of Smart Meters in the event that PECO's federal Stimulus application is successful. By implementing the proposed procurement approach, PECO will mitigate cost risks associated with increased demand for AMI systems.

PECO anticipates concluding these negotiations and filing its amended contracts with the Commission for approval by late 2009 (see Table 2).

PECO expects to begin procurement activities for the selection and contracting of AMI and Smart Metering technologies immediately following the filing of its Smart Meter Plan with the PUC. This process will utilize Exelon's established procurement processes to ensure fair, reliable, and prudent acquisition of Smart Metering technology and equipment. This process will begin with the compilation of the current functional requirements into more detailed technical requirements. These specifications will be informed by the functional requirements contained in the Implementation Order as well as those reviewed as part of PECO's internal and vendor workshops. These technical requirements will be supplemented with specific commercial requirements to form the basis of the vendor selection and contracting.

PECO anticipates selecting the preferred Smart Meter Technology and vendors by the beginning of the first quarter of 2010, at which point it will enter into final negotiations to secure a contract for the supply of AMI network and Smart Meter system components. These agreements are expected to include AMI network equipment, initial set of Smart Meters, Smart Gas Modules (testing samples), and support for configuration of its system software. PECO expects to execute contingent agreements with its selected vendors by the end of Q1 2010. These contracts then will be submitted to the PUC for approval prior to PECO's placement of firm purchase orders. Once PECO has received PUC approval for its selected technology and contractual commitments, purchase orders will be placed for acceptance test quantities and initial deployment. The quantity of meters to be purchased for initial deployment will be determined by the outcome of PECO's ARRA Stimulus grant application, but is expected to range between 100,000 and 600,000 AMI meters.

Of special note is the potential for longer delivery times due to the anticipated increased demand for Smart Meters from ARRA-funded Smart Grid projects. If this occurs, PECO's Smart Meter Plan schedule may be affected and require revision.

5.3 IT Systems Deployment and Integration Plan

A critical part of PECO's Smart Meter Plan is the deployment and integration of IT systems. PECO has developed a detailed process to implement IT applications, integrate those applications into PECO's systems to support the data flow from the Smart Metering technology, and retain existing IT functionalities. This activity represents a large investment, occurs early on in the process, and must be completed in time to support those PECO customers using Smart Meters.

The critical path aspect of the IT Systems implementation is due to the fact that no Smart Meter can be installed in a customer's socket until it can be read, processed by the data acquisition application, passed successfully to PECO's billing system, and properly rendered as an accurate electricity bill. Thus, the new systems (MDMS), and any changes to legacy systems and integrations required to install, activate, and bill from new Smart Meters, must be implemented before deployment of Smart Meters begin. Secondly, the supporting applications used to track and post meter installations and support necessary EDI transactions will also need to be in place to support any significant deployment of Smart Meters.

PECO's IT System plan grew out of an AMI Information System assessment performed as part of the development of this Plan. This assessment provided a high-level overview of PECO's IT systems and their required integrations. The IT System plan grew out of these considerations and is in and of itself a multi-phase program consisting of five distinct system releases. The structure and timing of these releases is aimed at ensuring that PECO retains all

operational functionality and benefits currently available from its AMR system.

5.4 Technology Acceptance Testing

In order to ensure that all technology installed onto PECO's grid system is properly tested and verified prior to widespread deployment, PECO has incorporated a disciplined technology acceptance test into this Smart Meter Plan. This acceptance test will include two distinct testing regimens.

The first will involve the type testing of any new metering equipment to be used on the PECO system. This includes extensive meter shop testing and validation of the accuracy, reliability and performance of the meter as a revenue metering instrument and as compliant with all applicable ANSI metering standards.

The second will involve the setup and closely controlled testing of the selected new AMI technology to ensure proper performance of the technology prior to expanded installation and customer acceptance testing. Following the completion of initial network designs, test criteria will be developed and measurement strategies determined to effectively validate the network design and performance. This acceptance test will include a small subset of the AMI network and a small number of sample Smart Meters. This initial AMI network setup will be fine-tuned for performance and monitored during a specified duration to verify its performance characteristics and compliance to Act 129 functionality, technical specifications, and PECO standards.

Once the performance and reliability of the new Smart Meters and the AMI communications system can be verified, PECO will formally accept the technology and launch initial system deployment. PECO expects to conduct the meter bench testing following the confirmation of meter vendor contracts. The field technology acceptance testing is expected to follow this shop testing, the completion of the first two IT System development releases, and the

receipt of the equipment from the AMI and Smart Meter vendors. PECO expects to complete this testing activity by the third quarter of 2011.

5.5 Initial System Deployment

After PECO formally "accepts" the system, PECO will install the AMI network equipment required to blanket the service territory with AMI network coverage. Once again, the delivery capacity of the AMI vendor may impact the pace for this stage of Phase One deployment. Assuming current delivery lead times remain unchanged, PECO anticipates completing the deployment of the AMI communications network across the service territory in the first quarter of 2012.

PECO's goal is to establish the AMI communications network in a way that will allow customers throughout the service territory to get Smart Meter capabilities regardless of location. This approach is necessary to accommodate the Act 129 requirement to deploy Smart Meters after the grace period upon customer request or wherever new construction may occur.

Prior to deployment of the AMI Network, PECO will conduct an assessment of business readiness and required training necessary for any anticipated new business processes to be implemented into PECO operational groups.

Following the completion of the deployment of this AMI network, PECO will begin the replacement of its current AMR meters with Smart Meters. Depending on the success of PECO's ARRA grant application, PECO expects to deploy up to 600,000 Smart Meters as part of this initial deployment. This quantity of meters will support an initial dynamic pricing and customer acceptance program that forms the final part of Phase One of PECO's Smart Meter Plan.

5.6 Initial Dynamic Pricing and Customer Acceptance Program

PECO will initiate a collaborative process with interested statutory advocates,

government entities, technology providers and other stakeholders to design the content of its initial dynamic pricing and customer acceptance program with the goal of rolling out this program beginning in the fourth quarter of 2011. The purpose of the program is to implement initial dynamic pricing options, including real-time pricing, and to educate customers about the new dynamic pricing options. PECO believes the program will provide valuable insights into how customers are likely to utilize dynamic pricing.

5.7 Universal Deployment of Smart Meters

Phase Two of PECO's Smart Meter Plan underlies the universal installation of Smart Meters across PECO's service territory. The pace of this deployment will be influenced by the availability of federal Stimulus grant funds to finance some of the initial accelerated deployments, and by consideration of potential stranded assets and transition costs associated with PECO's current AMR system. PECO will communicate and seek approval of its plans for this second phase of deployment in a separate filing with the Commission toward the end of the 30-month grace period established by the Implementation Order.

At the conclusion of the grace period, PECO's service territory will have been covered by the AMI network, and the technology will have been fully tested and proven. These prudent and diligent steps are planned in order to provide PECO and its customers with verification of the efficacy of its universal deployment plan.

Finally, PECO expects to maintain the greatest leverage with suppliers for containing the future costs of anticipated large-scale purchases of Smart Meters. As such, PECO will explore possible purchasing synergies.

5.8 Customer requests for interval data and Smart Meters prior to Universal Deployment

PECO will be able to provide interval data to customers during the 30-month grace period upon customer request using its existing Cellnet AMR systems or its existing MV-90 interval data system for commercial & industrial ("C/I") accounts. In addition, upon customer request, PECO intends to provide direct access to the customer's interval data to third parties via EDI transactions of the data currently available from its existing Cellnet AMR system and any additional Advanced Read Services it is able to procure. Commercial and industrial customers will continue to have the options of pulse outputs from existing MV-90 meters or interval data as currently provided.

If a customer requests that a Smart Meter be installed after the grace period but prior to universal deployment, PECO will charge the customer a fee based on the incremental cost of the meter installation itself. There may be additional costs to reflect design of the selected AMI technology.

It is important to note that replacing a MV-90 capable meter with a Smart Meter is quite complex. Therefore, if a customer requests such a replacement after the grace period and prior to universal deployment, PECO will perform an individual cost estimate for that customer. PECO expects to detail its general plans for the future replacement of the MV-90 system and the C/I meters supported by this system as part of its mid-2012 filing.

6. Costs

6.1 Summary of Smart Meter Plan Costs

PECO's Smart Meter Plan has developed careful cost estimates of the various phases of the Smart Meter program. The expected costs for Phase One are summarized in the schedule below:

Table 7: Smart Meter Plan Initial Deployment Costs

	Initial Deployment (100,000 meters)						
	2010		2011		2012		
	O&M	Capital	O&M	Capital	O&M	Capital	Total
AMI Costs							
Meters and Installation	$ -	$ -	$ -	$ 17	$ -	$ -	$ 17
Network Communication System	-	-	1	52	-	-	53
IT Applications and Support	-	36	12	58	12	4	122
Management and Internal Labor	1	-	5	-	4	-	10
Customer Acceptance Testing	-	-	3	-	10	-	13
Total Initial Deployment Costs	**$ 1**	**$ 36**	**$ 22**	**$ 127**	**$ 26**	**$ 4**	**$ 215**
Stranded Costs:							
Accelerated Depreciation	3		3		-		5
Other Stranded Costs			-		-		1
Total Stranded Costs	**$ 3**	**$ -**	**$ 3**	**$ -**	**$ -**	**$ -**	**$ 6**
Total Costs	**$ 4**	**$ 36**	**$ 24**	**$ 127**	**$ 26**	**$ 4**	**$ 221**
	Expanded Initial Deployment (EID)[1]						
Adjustments for Expanded Deployment:							
Additional 500,000 meters	$ -			$ 8		$ 69	$ 77
Savings on installation of 100,000 meters	-			(2)		-	(2)
Total EID Costs	**$ 1**	**$ 36**	**$ 22**	**$ 133**	**$ 26**	**$ 73**	**$ 290**
Requested Stimulus Grant[2]		**$ 18**	**$ 11**	**$ 66**	**$ 10**	**$ 36**	**$ 143**
EID Net of Stimulus	**$ 1**	**$ 18**	**$ 11**	**$ 66**	**$ 15**	**$ 36**	**$ 148**
Stranded Costs:							
Accelerated Depreciation[3]	14		14		14		42

Other Stranded Costs				0			3			3		
Total Stranded Costs for EID	**$ 14**	**$ -**	**$ 14**	**$ -**	**$ 17**	**$ -**	**$ 45**					
Total Costs for EID	**$ 15**	**$ 18**	**$ 25**	**$ 66**	**$ 32**	**$ 36**	**$ 193**					

(1) Expanded Initial deployment is contingent on PECO's full receipt of a DOE matching Stimulus grant

(2) Stimulus grant will be recorded as contribution in aid of construction for capital expenditures or a reduction in O&M expense and is taxable income.
(3) Assumes a ten-year mass deployment timeframe

Numbers may not add due to rounding.

6.2 Process of Gathering Assumptions for the Financial Model

PECO gathered cost inputs through many channels of interaction with the Exelon and PECO organizations beginning in April 2009. Additionally, PECO management -- working with the Technical, Regulatory, Legal and other teams -- refined the core assumptions of the financial model.

The PECO technology evaluation team gathered cost data from prior PECO and Exelon efforts as well as from several workshops with AMI vendors during the first week of June 2009. PECO also gathered cost inputs from the PECO and Exelon Information Technology team to support the cost inputs for its proposed System Integration, MDMS, and Middleware IT investments. In addition, these costs took into account vendor input and data gathered from Exelon's recent RFP and vendor selection process on ComEd's behalf.

Cost inputs also were gathered from the Exelon Supply organization and from the PECO operations group responsible for the current L+G outsourcing and metering operation. This effort included evaluating the organizational impact of an "own and operate" business structure assumption on the current PECO organization. This evaluation helped determine the operations staffing assumptions used in the financial model. Finally, PECO financial assumptions, cost

inputs, and cost treatments were gathered from the PECO Finance group.

Average meter and installation costs were used in the analysis due to the indicative pricing that PECO received during the vendor workshops. In other areas, such as the AMI Network and IT Applications and Support, where indicative pricing is less certain due to pricing dynamics and the level of customization required, PECO used conservative cost estimates for the analysis. It is appropriate to rely on the higher end of the range where there is uncertainty as to pricing dynamics and customization is required in much of the IT work. Cost estimates will be refined through a competitive vendor selection and contracting process. PECO will update the Commission on its cost estimates gathered during this process.

The cost of the initial AMI deployment (e.g. Phase One) of 100,000 AMI meters is expected to be $215 million with a range of $125 to $225 million depending on equipment, installation and IT development costs as well as the meter and installation costs for the initial meters deployed. However, if PECO's Stimulus request is granted in full, PECO will increase its initial meter deployment from 100,000 to 600,000 meters. The additional meter purchases would increase the estimated initial deployment cost to $290 million with a range of $210 million to $300 million based on the same cost variance ranges used above. The requested grant would reduce the PECO-funded portion of the expenditures, net of stimulus funds, to $148 million for capital and operating and maintenance costs.

The AMI network communication system is estimated to cost between $25 and $55 million, with an initial estimate of $53 million at the high end of the range. This cost includes approximately $31 million for the AMI communication network, $9 million for the core foundation communication network, $8 million for the network design and implementation and $6 million for the upfront cost of the AMI system software license. (The core foundation

communication network provides for connectivity between the AMI communication network and PECO's high bandwidth fiber communication network.) AMI network costs estimates are based on inputs from PECO's vendor workshops with the exception of the core foundation network, which was estimated by PECO for an RF WAN backhaul capable of supporting the AMI data communication. The majority of the AMI communication equipment will be depreciated over a 15-year useful life, with the exception of the software license and a small amount of computer hardware that will be depreciated over a five-year period.

The IT applications and support component of the AMI Infrastructure of $75 to $125 million, with an initial estimate of $122 million, represents approximately one-half of PECO's initial deployment expenditures. The MDMS is expected to cost approximately $26 million to deploy, while the Middleware component of the IT systems is expected to cost an additional $21 million. In addition, IT operational and maintenance expenditures during the deployment period (e.g. Phase One, 2010 through 2012) of approximately $24 million are expected to be incurred for software license maintenance fees for MDMS and Middleware and data storage costs. Finally the System Integration portion of the project is expected to cost approximately $51 million. Systems integration ensures that the MDMS, Middleware system, and AMI communication system software can communicate with each other and with the PECO internal systems that support customer service and billing, outage management, geographical information (GIS), energy suppliers and service providers, and other enterprise resource management and financial systems. The cost for the IT investment was estimated based on inputs from Exelon's Supply and IT organizations based on historical costs of similar projects. The capitalized IT investments will be depreciated over a useful life of five years.

The Smart Meters are expected to cost $10 to $20 million for the initial deployment of

100,000 meters, with an initial estimate of $17 million. This cost includes expenditures to purchase the Smart Meters, including an integrated remote connect switching device in each meter, with a range of $116 to $144 per meter and a mid-point of $130 per meter. The cost also includes installation costs of approximately $38-$40 per meter. The cost of AMI electric meters are based on inputs from the vendor workshops as an "all in" average, including the remote connection switch, the home area network (HAN) radio and an extended warranty of 60 months. The estimated prices are assumed to include or otherwise support the functional requirements included in the PUC's Implementation Order. The installation costs are based on PECO's current charges from its subcontractor to perform most electric field installation work on a limited installation basis.

If PECO receives full Stimulus grant funding for its Smart Meter project, PECO intends to increase the number of meters purchased and deployed during Phase One up to 600,000. This increases the meter costs by a range of $70 million to $85 million, with a mid-point of $77 million. The per unit installation cost of the AMI meters is reduced in a larger deployment scenario from $39 per meter to $24 per meter, yielding approximately $2 million in savings on the initial 100,000 meters. Smart Meters are expected to be depreciated over a fifteen-year useful life.

The cost to administer the initial dynamic pricing and customer acceptance program is estimated to be $13 million, with a range from $10 million to $15 million. These costs include software for advance web presentment, in-home technology, project management (including research, evaluation, project design and planning), incentives and communication.

The final portion of the Phase One cost estimate involves $10 million of management and internal employee cost with a range of $5 million to $15 million. These costs represent costs to

supervise deployment activities and keep the projects on track and on budget, and the costs are based on PECO's assessment of the number of full time employees required to manage a project of this magnitude and IT production support at an average all - in cost per employee.

6.3 Accelerated Depreciation and Stranded Costs

To the extent that PECO deploys smart meters sooner than required to replace failures of its existing AMR meters and meter communication modules, it will incur accelerated depreciation on these existing meters and modules. The total estimated accelerated depreciation on the initial deployment of 100,000 and 600,000 meters is $5 million and $42 million, respectively. The total amount of accelerated depreciation will depend on the final timeline for universal deployment of the new AMI meters.

The company may also incur stranded costs related to the fees it pays, or will be required to pay, L+G for the existing AMR system. The benefits of full Stimulus funding ($143 million) far exceeds the amount of total accelerated depreciation and stranded costs incurred by expanding the initial deployment to 600,000 meters ($39 million).

6.4 Total Project Costs

PECO's total cost to offer Smart Meters to all of its customers, including the AMI network and IT infrastructure as mentioned above will vary primarily due to the speed of full deployment; however, vendor selection and the final cost negotiation will also impact the price of the project. We estimate full deployment costs to range from $500 million to $550 million depending on the speed of the universal deployment of Smart Meters. This range does not reflect any funding Stimulus. If PECO receives requested federal funds, the amount, net of tax, will be applied against the spending as a contribution in aid of construction or reduction in O&M expense and will enable PECO to increase the speed of its smart meter deployment.

In addition to the AMI and Smart Meter costs mentioned above, PECO will incur additional costs for its current AMR electric meters until the AMI network and IT systems are fully deployed.[9]

6.5 Avoided Costs

As noted previously, PECO currently incurs costs to replace its AMR meters upon a meter's failure, either directly or through its contract with L+G. Should PECO replace its AMR meters with new Smart Meters upon failure, the Company will not incur these costs to purchase and install an AMR meter. Once the AMI communication network is in place and the MDMS can support the billing activities, PECO plans to replace any failed AMR meter with a new AMI Smart Meter.

6.6 Benefits of Smart Meter Deployment

PECO's initial deployment of Smart Meters (e.g. Phase One) will better enable customers to take advantage of dynamic pricing programs to be offered by PECO. This will further enable customers to reduce usage during high-cost periods or shift usage to lower-cost periods. Shifting usage from peak periods not only benefits the customer through a lower bill, but it may also reduce overall energy prices in the market. Additionally, the reduced usage can provide environmental benefits through lower emissions of pollutants as generating stations will produce less energy.

Often the deployment of an AMI communications system and Smart Meters leads to operational benefits as costs are eliminated from the meter reading and meter operations departments of the utility. In PECO's case, PECO realized many operational benefits with the deployment of its current AMR meters from 1999 to 2003, including elimination of manual

[9] PECO also serves gas customers using its AMR gas modules and will continue to incur fees, or will incur additional costs, to maintain the gas network or convert the gas modules to the new AMI system.

meter reading, improvements in operations and meter maintenance, ability to receive daily and on-request meter readings and the receipt of interval data, power factor and peak demand for commercial customers. The additional operational benefits to be realized from the deployment of AMI and Smart Meters are due primarily from the inclusion of the remote connect functionality as discussed below.

Furthermore, deployment of a smart meter system at this time may result in the receipt of federal Stimulus grant money, which will further reduce the costs to customers.

6.7 Cost and Benefits of Remote Connect Functionality

Inclusion of the remote connect functionality in the Smart Meters adds approximately $35 in cost to each meter, based on the information received in PECO's vendor workshops. Most current AMI and Smart Meter systems are deployed with this feature. If fully deployed in PECO's 1.6 million meter population below 200 amps, this functionality adds $57 million to the cost of the project (included in the meter cost estimates above). (The feature is only available for single-phase meters with a rating below 200 amps.) Once fully deployed, the remote connection functionality is expected to generate up to $13 million in annual savings to PECO. Of that amount, approximately $7 million is in operational savings and about $6 million is in societal savings. The net present value ("NPV") of the remote connect functionality over 15 years of deployment is $4 million in the base case of the initial deployment and $17 million in the case of expanded deployment based on the receipt of federal Stimulus grant money. The NPV is displayed in Exhibit APK-2 to the testimony of Ann P. Kelly. Also depicted in Exhibit APK-2 are the net annual revenue requirements of the remote connect functionality. The investment shows a net benefit to customers, when societal and operational benefits are included, after about three years into the deployment.

The cost of the remote connection feature is included in the cost of the meters and will be reflected in the Smart Meter surcharge. The operational benefits of this functionality include avoided connection costs and reduced charge - offs. As these savings are difficult to track, PECO proposes to calculate the cost recovery charge using an agreed upon savings amount, which will not be reconciled.

In addition to those operational benefits, the remote connection feature also provides societal benefits that automatically flow through to the benefit of customers and that are not reflected in the calculation of recoverable costs. These include a reduction in unbilled charges, due to the ability to disconnect hard-to-reach meters that currently have continuous service, and avoided reconnection charges. The societal benefits flow through to customers through lower reconnection fees or reduced purchased power costs in the case of continuous service. Because these benefits automatically flow through to customers, they are not reflected in the 1307 surcharge. At the time of a base rate case, the operational benefits of this functionality would be rolled into base rates, while the societal benefits would continue to flow through to customers automatically.

In summary, PECO estimates that the benefits received from the remote connection feature will fully offset the cost incurred to purchase the functionality, once meters are installed and operating as expected.

7. Cost Recovery

7.1 Recovery Method

Act 129 provides that a utility is entitled to full and current recovery of the costs associated with implementation of a Smart Meter system net of any operational savings of the system. The Act allows recovery through a reconcilable surcharge under Section 1307 or through base rates with costs deferred between rate cases. The decision on cost recovery methodology rests with the utility.

The Company is proposing to use a Section 1307 mechanism to recover the net cost of its Smart Meter program. Use of the Section 1307 mechanism will provide full and current recovery of its costs during the implementation and deployment of the meters and associated AMI network, communications networks, MDMS, Middleware and System Integration. Under the Section 1307 mechanism, the Company will project the costs to be recovered over the ensuing year to establish the surcharge. A Section 1307 mechanism is reconcilable and, therefore, requires tracking actual cost versus actual revenue collection with adjustments made in subsequent filings. The actual monthly revenue will be compared to actual monthly costs to determine any over or under recovery. PECO Statement No. 5 describes in detail the calculation of the surcharge and the reconciliation process. Specifically Exhibit ABC-2 provides an example of how the surcharge is calculated. Included in the example is how the capital and expenses associated with the Plan are converted into revenue requirements for recovery through the Section 1307 surcharge.

PECO's proposed Smart Meter Cost Recovery Rider, provided in PECO Exhibit ABC-3, will establish a non-bypassable charge to apply to the bills of all customers whether they purchase default service from PECO or purchase generation from an electric generation supplier.

It is important to note that while PECO is proposing to use a Section 1307 mechanism to achieve full and current recovery during the implementation of the Smart Meter Plan, once the system is fully deployed, it would be appropriate to roll all meter-related costs into base rates.

7.2 Recoverable Costs

Costs included in the Section 1307 mechanism will include the meters and installation, communications network, IT applications and support, management and internal labor, customer acceptance testing, and other administrative costs such as the cost of plan approval and development. The revenue requirements associated with these items are recoverable and include all operation and maintenance expense, as well as depreciation, return on, and taxes associated with capital investment net of any operational benefits or avoided costs plus any stranded costs for the above items.

To the extent that the Company receives a federal Stimulus grant, the grant will offset the investment or recoverable expenses. As discussed in PECO Statement No. 5, such grant money for capital will be treated as contributions in aid of construction (CIAC) for ratemaking purposes. Grant money for allowable expenses will be credited to recoverable expenses. Similar to CIAC, the grant money is taxable and added to the rate base. A complete description of recoverable cost is contained in PECO Statement No. 5.

While PECO is proposing to use a Section 1307 mechanism to achieve full and current recovery during implementation of the Smart Meter Plan, once the system is fully deployed, ongoing costs will be appropriately incorporated into base rates. Furthermore, PECO is considering unbundling all meter and meter reading expenses from base rates in its next rate case and including them in the Section 1307 charge. When Smart Meters are fully deployed, costs would be rolled back into base rates.

7.3 Rate Design

PECO's proposed Smart Meter Cost Recovery Rider, provided in PECO Exhibit ABC-3, will establish a non-bypassable charge to apply to the bills of all customers, whether they purchase default service from PECO or purchase generation from an electric generation supplier. The charge will be collected on an equal dollar per customer basis within each rate class. For billing purposes, the incremental charge will be added to the current fixed distribution charge.

7.4 Cost Recovery Procedure

A preliminary Section 1307 surcharge would be filed on August 30 of each year to be effective on January 1 of the following year. A final Section 1307 surcharge filing would be made on October 1, permitting an evidentiary hearing, if necessary, prior to the January 1 effective date.

7.5 Cost Allocation

In accordance with the Commission's Implementation Order, costs are to be allocated to those who benefit from the system, or if that cannot be determined, costs are to be allocated on a reasonable basis. PECO maintains that allocating costs on a fair and reasonable basis to all customers is the appropriate course of action. Such allocation primarily will be on a customer basis for the supporting systems. In the case of the actual meters, the costs will be directly assigned to the appropriate rate classes, as different meters for the classes may have different costs. Additional detail on cost recovery and cost allocation may be found in PECO Statement No. 5.

PECO

APPENDIX 1

PECO Smart Meter Plan Implementation Timeline

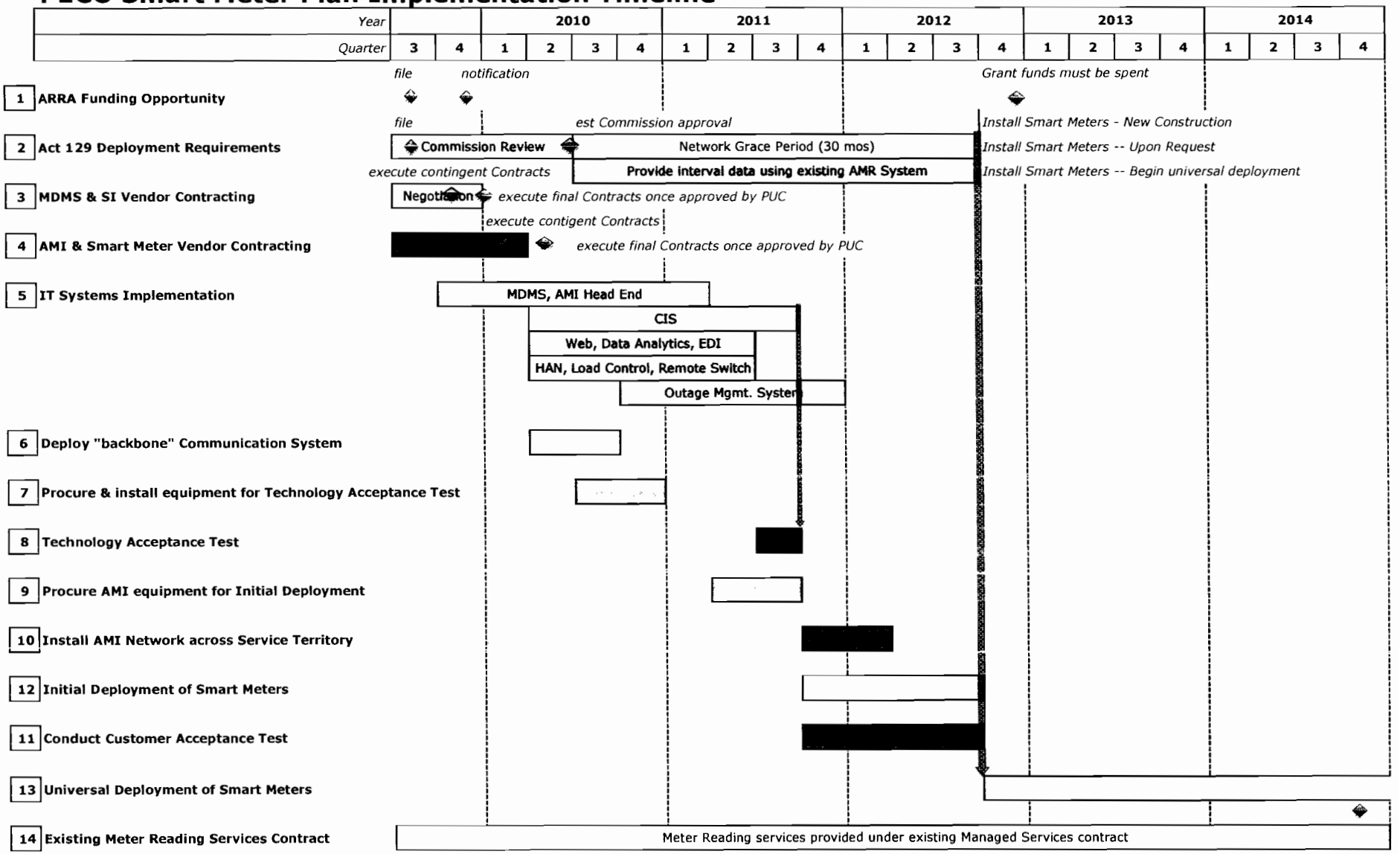


EXHIBIT 6

C. TABLE OF CONTENTS

ELECTRIC SERVICE REQUIREMENTS

Note: To perform a word search on this document click on the “Edit” tool bar above, then click on “Find”. Next type in the word you are trying to find, and then click on the “Find Next” button.

A. FORWORD

This Electric Service Requirements (ESR) manual covers the general conditions that apply to the furnishing of electricity in all of the service areas of the PECO Energy Company System, and must be adhered to in all respects by those Customers receiving service from the Company.

The requirements published in this manual supersede any requirements that were published in previous revisions of the ESR. Equipment, regulatory changes, and other evolving issues may necessitate the implementation of changes prior to the publication of the next revision of the manual. For this reason, you need to confer with your PECO Representative who will be assisting you in the preparation of your job to insure that you are planning your work in conformance with any recent changes that are not reflected in this edition of the ESR.

2. DEFINITIONS

2.1 ACCEPTABLE
Acceptable to the Company.

2.2 ADVANCED METER
A meter that is capable of remote reading, and is capable of storing electric consumption data at specified time intervals of no greater than one-half hour and in conformance with applicable performance specifications.

2.3 APPROVED
Acceptable to the authority enforcing the National Electric Code

2.4 AMPACITY
Current carrying capacity expressed in amperes.

2.5 BRANCH CIRCUIT
That portion of a wiring system extending beyond the final overcurrent device protecting the circuit. See Figure 8.02

2.6 COMPANY
PECO Energy Company

2.7 COMPENSATED METERING
Metering of high voltage services by connecting the metering transformers on the low voltage side of the Customer's power transformer and utilizing a special meter to calculate the transformer losses that occur between the point of delivery and the metering point. Transformer losses are added to the meter registration so that it is equivalent to metering at the higher service voltage.

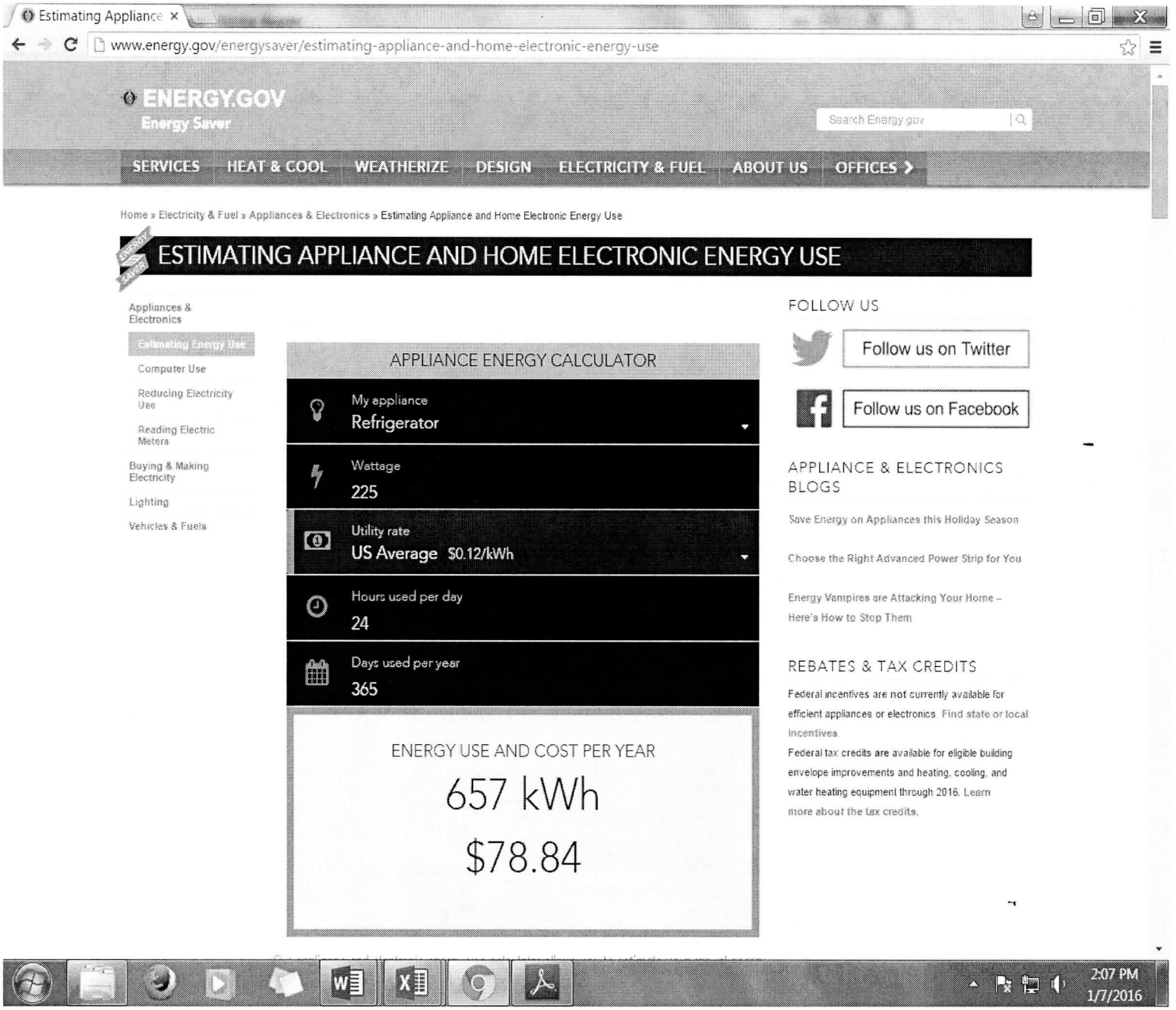
2.8 CONTRACTOR
Any person, partnership, or corporation performing a service for and acting in behalf of the Customer or premises owner.

2.9 CUSTOMER
Any person, partnership, association, or corporation lawfully receiving service from the Company.

2.10 CUSTOMER'S SERVICE EXTENSION
The facilities extending from the Customer's service equipment to the Company's service supply lines. See Figure 8.02

2.11 FEEDER
The circuit conductors between the service equipment and the branch circuit overcurrent device (panel). See Figure 8.02

EXHIBIT 7


Estimating Appliance
www.energy.gov/energysaver/estimating-appliance-and-home-electronic-energy-use
ENERGY.GOV
Energy Saver
Search Energy.gov
SERVICES
HEAT & COOL
WEATHERIZE
DESIGN
ELECTRICITY & FUEL
ABOUT US
OFFICES
Home » Electricity & Fuel » Appliances & Electronics » Estimating Appliance and Home Electronic Energy Use
ESTIMATING APPLIANCE AND HOME ELECTRONIC ENERGY USE
Appliances & Electronics
Estimating Energy Use
Computer Use
Reducing Electricity Use
Reading Electric Meters
Buying & Making Electricity
Lighting
Vehicles & Fuels
APPLIANCE ENERGY CALCULATOR
My appliance
Refrigerator
Wattage
225
Utility rate
US Average $0.12/kWh
Hours used per day
24
Days used per year
365
ENERGY USE AND COST PER YEAR
657 kWh
$78.84
FOLLOW US
Follow us on Twitter
Follow us on Facebook
APPLIANCE & ELECTRONICS BLOGS
Save Energy on Appliances this Holiday Season
Choose the Right Advanced Power Strip for You
Energy Vampires are Attacking Your Home – Here's How to Stop Them
REBATES & TAX CREDITS
Federal incentives are not currently available for efficient appliances or electronics. Find state or local incentives.
Federal tax credits are available for eligible building envelope improvements and heating, cooling, and water heating equipment through 2016. Learn more about the tax credits.
2:07 PM
1/7/2016

ESTIMATING APPLIANCE AND HOME ELECTRONIC ENERGY USE

Appliances & Electronics
- Estimating Energy Use
- Computer Use
- Reducing Electricity Use
- Reading Electric Meters

Buying & Making Electricity
Lighting
Vehicles & Fuels

APPLIANCE ENERGY CALCULATOR

My appliance
Furnace fan

Wattage
295

Utility rate
US Average $0.12/kWh

Hours used per day
24

Days used per year
365

ENERGY USE AND COST PER YEAR

2584.2 kWh

$310.10

APPLIANCE & ELECTRONICS BLOGS

Save Energy on Appliances this Holiday Season

Choose the Right Advanced Power Strip for You

Energy Vampires are Attacking Your Home – Here's How to Stop Them

REBATES & TAX CREDITS

Federal incentives are not currently available for efficient appliances or electronics. Find state or local incentives.

Federal tax credits are available for eligible building envelope improvements and heating, cooling, and water heating equipment through 2016. Learn more about the tax credits.

EXHIBIT 8

PECO Account No. 19273-01508 — **Deree Norman - 5367 Thomas Ave - Phila, PA 19143**

	Pennsylvania Electric Company (Bill Recap)					Philadelphia Gas Works Account No. 2116347424				
	From	*To*	*kWh*	*Days Billed*	*Avg Daily Temp*	*From*	*To*	Ccf	*Days Billed*	*Days Double Billed > 1*
	1/12/2016	2/11/2016	115	30	36	1/25/2016	2/23/2016	140	29	
	12/9/2015	1/12/2016	156	34	48	12/21/2015	1/25/2016	144	35	
1	11/8/2015	12/9/2015	122	31	50	11/20/2015	12/21/2015	13	31	
2	10/8/2015	11/8/2015	124	31	59	10/21/2015	11/20/2015	12	30	
3	9/9/2015	10/8/2015	203	29	69	9/22/2015	10/21/2015	9	29	
4	8/10/2015	9/9/2015	388	30	79	8/21/2015	9/22/2015	9	32	
5	7/12/2015	8/10/2015	403	29	80	7/22/2015	8/21/2015	8	30	
6	6/10/2015	7/12/2015	368	32	78	6/22/2015	7/22/2015	9	30	
7	5/11/2015	6/10/2015	158	30	70	5/21/2015	6/22/2015	12	32	
8	4/12/2015	5/11/2015	114	29	61	4/22/2015	5/21/2015	14	29	
9	3/12/2015	4/12/2015	330	31	45	3/23/2015	4/22/2015	13	30	
10	2/11/2015	3/12/2015	540	29		2/23/2015	*3/23/2015*	17	28	
11	1/12/2015	2/11/2015	690	30	32	1/23/2015	2/23/2015	18	31	
12	12/9/2014	1/12/2015	632	34	37	12/22/2014	1/23/2015	18	32	
13	11/6/2014	12/9/2014	455	33	43	11/20/2014	12/22/2014	19	32	
14	10/8/2014	11/6/2014	117	29	58	10/21/2014	11/20/2014	13	30	
15	9/9/2014	10/8/2014	194	29	66	9/22/2014	10/21/2014	10	29	
16	8/10/2014	9/9/2014	317	30	75	8/21/2014	9/22/2014	11	32	
17	7/10/2014	8/10/2014	331	31	76	7/23/2014	8/21/2014	9	29	
18	6/10/2014	7/10/2014	302	30	77	6/23/2014	7/23/2014	10	30	
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20	4/13/2014	5/12/2014	396	29	58	4/24/2014	5/22/2014	12	28	
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27	9/10/2013	10/9/2013	221	29	67	9/23/2013	10/22/2013	10	29	
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34	2/12/2013	3/13/2013	310	29	39	2/25/2013	3/25/2013	16	28	2
35	1/13/2013	2/12/2013	301	30	34	1/25/2013	2/26/2013	17	32	4
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38	10/9/2012	11/7/2012	126	29	55	10/23/2012	11/26/2012	19	34	2
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43	5/10/2012	6/11/2012	142	32	70	5/23/2012	6/25/2012	11	**33**	
44	4/11/2012	5/10/2012	110	29	59	4/24/2012	5/23/2012	10	**29**	
45	3/13/2012	4/11/2012	125	29	55	3/23/2012	4/24/2012	20	**32**	
46	**2/13/2012**	**3/13/2012**	**124**	**29**	**44**	**2/23/2012**	**3/23/2012**	**16**	**29**	
47	**1/12/2012**	**2/13/2012**	**141**	**32**	**38**	**1/24/2012**	**2/23/2012**	**19**	**30**	
48	**12/11/2011**	**1/12/2012**	**142**	**32**	**41**	**12/21/2011**	**1/24/2012**	**24**	**34**	
49	**11/8/2011**	**12/11/2011**	**150**	**33**	**50**	**11/22/2011**	**12/21/2011**	**19**	**29**	
50	**10/10/2011**	**11/8/2011**	**143**	**29**	**55**	**10/21/2011**	**11/22/2011**	**17**	**32**	
51	**9/11/2011**	**10/10/2011**	**166**	**29**	**66**	**9/22/2011**	**10/21/2011**	14	**29**	
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53	7/12/2011	8/10/2011	284	29	82	7/22/2011	8/22/2011	12	**31**	
54	6/12/2011	7/12/2011	194	30	77	6/22/2011	7/22/2011	13	**30**	
55	5/11/2011	6/12/2011	223	32	72	5/23/2011	6/22/2011	14	**30**	
56	4/12/2011	5/11/2011	154	29	60	4/21/2011	5/23/2011	16	**32**	
57	3/14/2011	4/12/2011	534	29	47	3/24/2011	4/21/2011	16	**28**	
58	**2/13/2011**	**3/14/2011**	**585**	**29**	**43**	**2/23/2011**	**3/24/2011**	17	**29**	
59	**1/12/2011**	**2/13/2011**	**982**	**32**	**30**	**1/25/2011**	**2/23/2011**	**18**	**29**	
60	**12/31/2010**	**1/12/2011**	**398**	**12**						
61	**12/9/2010**	**12/31/2010**	**266**	**22**	**32**	**12/21/2010**	**1/25/2011**	20	**35**	
62	**12/9/2010**	**12/31/2010**	**420**	**22**						
63	**11/8/2010**	**12/9/2010**	**282**	**31**	**46**	**11/22/2010**	**12/21/2010**	18	**29**	
64	**10/10/2010**	**11/8/2010**	**169**	**29**	**56**	**10/21/2010**	**11/22/2010**	18	**32**	
65	**9/11/2010**	**10/10/2010**	**378**	**29**	**68**	**9/22/2010**	**10/21/2010**	13	**29**	
						8/20/2010	9/22/2010	12	**33**	
						7/22/2010	8/20/2010	11	**29**	

2012 is a lead year

PHILADELPHIA GAS WORKS

Gas Leak Emergencies: 215-235-1212
Billing & General Information (English & Espanol): 215-235-1000
Access Your Account Online: www.pgworks.com

Billing Date: Feb 24, 2016
Account Number: 2116347424

MONTHLY STATEMENT

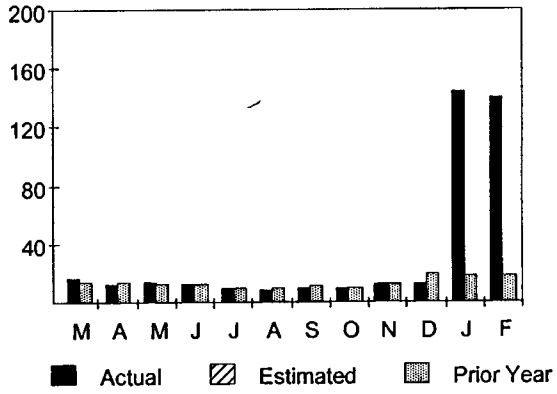
From Jan 25, 2016 thru Feb 23, 2016 (29 Days)

DEREE J NORMAN
5367 THOMAS AVE
PHILADELPHIA PA 19143-3143

Billing Summary

Past Due Amount	$884.20
Current Charges	$183.92
Total Amount Due By Mar 18, 2016	**$1,068.12**

Energy Usage Information



- Average daily temperature 36.7 °F.
- Your average daily cost is $6.34 compared to $1.17 last year.
- For the last 12 months:
  - Your total usage is 400 Ccf.
  - Your average monthly usage is 33.33 Ccf.

PGW celebrates 180th anniversary. In 1836, 46 natural gas lamps were lit along Second Street for the first time by employees of the newly formed Gas Works. Today, PGW maintains 6,000 miles of underground pipe and safely deliver 78 billion cubic feet of natural gas to our 500,000 customers, annually. Thank you for being a part of our history.

LIHEAP. Simple. Quick. Worth it. Last year, free LIHEAP cash grants helped over 60,000 PGW customers pay for winter heat. Text FAST to 75308 for more info. Text and data rates may apply.

Questions or Complaints about your bill? Please call us before the due date at 215-235-1000, or write to: PGW P.O. Box 3500, Phila., PA 19122-0050

Please return this portion with your payment.
Write your account number on your check or money order made payable to Philadelphia Gas Works

Account Number: 2116347424
Due Date: Mar 18, 2016
Please Pay: $1,068.12

Place "X" in box for address corrections. Print corrections on reverse side.

Amount Enclosed:

036967 000005472

DEREE J NORMAN
5367 THOMAS AVE
PHILADELPHIA PA 19143-3143

234

Philadelphia Gas Works
P.O. Box 11700
Newark, NJ 07101-4700

00211634742480000000010681 24

PGW

DEREE J NORMAN
5367 THOMAS AVE
PHILADELPHIA PA 19143-3143

Billing Date: Feb 24, 2016
Account Number: 2116347424

Meter Detail Meter #: 01726428 Cycle #: 16

Next Meter Read: Mar 22, 2016
Service Point ID: 9972483080

From			To						
Date	Reading	Type	Date	Reading	Type	Difference	Usage (Ccf)	Conversion Factor	Total Therms
01/25/2016	6028	Actual	02/23/2016	6168	Actual	140	140.00	1.0535	147.49

Current Basic Charges

SA ID# 5820860010, 5367 THOMAS AVE
Residential Heat & Domestic

Supply Charges	
Commodity Charge 140 Ccf @ $0.40933	$57.31
Total Supply Charges	$57.31
Delivery Charges	
Customer Charge @ $12.00	$12.00
Distribution Charge 140 Ccf @ $0.73827	$103.36
Distribution System Improvement Charge 5%	$1.19
Distribution System Improvement Charge 7.5%	$6.86
Gas Cost Adjustment @ -$0.0187	-$2.62
Weather Normalization Adjustment	$5.82
Total Delivery Charges	$126.61
Total Current Billing Charges	$183.92

PGW Messages

Effective February 1, 2016 the Distribution System Improvement Charge increases to 7.50% and the change will increase the typical residential heating bill by about $18.92 a year.

Your estimated gas price to compare is $0.39072 per CCF.This may change in March, June, September and December.

Shopping Information Box

When shopping for Natural Gas with a Natural Gas Supplier, please provide the following:

PGW Account #: 2116347424
Service Point ID: 9972483080
Rate Class: General Service Residential
Rate Schedule: GSR

If you are already shopping know your contract expiration date.

PHILADELPHIA GAS WORKS

Gas Leak Emergencies: 215-235-1212
Billing & General Information (English & Espanol): 215-235-1000
Access Your Account Online: www.pgworks.com

Billing Date: Jan 26, 2016
Account Number: 2116347424

MONTHLY STATEMENT

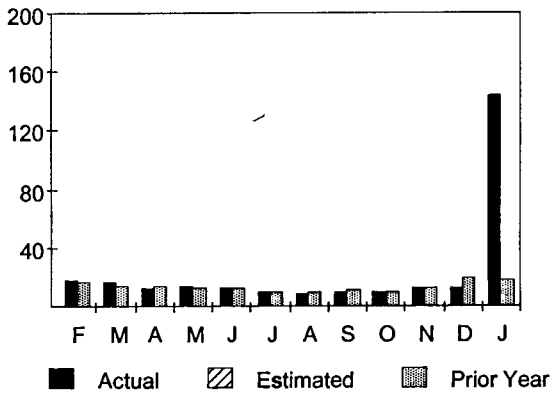
From Dec 21, 2015 thru Jan 25, 2016 (35 Days)

DEREE J NORMAN
5367 THOMAS AVE
PHILADELPHIA PA 19143-3143

Billing Summary

Past Due Amount	$685.62
Current Charges	$198.58
Total Amount Due By Feb 19, 2016	**$884.20**

Energy Usage Information



- Average daily temperature 39.9 °F.
- Your average daily cost is $5.67 compared to $1.17 last year.
- For the last 12 months:
  - Your total usage is 278 Ccf.
  - Your average monthly usage is 23.17 Ccf.

Questions or Complaints about your bill? Please call us before the due date at 215-235-1000, or write to: PGW P.O. Box 3500, Phila., PA 19122-0050

Please return this portion with your payment.
Write your account number on your check or money order made payable to Philadelphia Gas Works

Account Number: **2116347424**
Due Date: **Feb 19, 2016**
Please Pay: **$884.20**

Place "X" in box for address corrections. Print corrections on reverse side.

Amount Enclosed:

036860 000005467 **

DEREE J NORMAN
5367 THOMAS AVE
PHILADELPHIA PA 19143-3143

Philadelphia Gas Works
P.O. Box 11700
Newark, NJ 07101-4700

23

00211634742480000000000884208

PGW

DEREE J NORMAN
5367 THOMAS AVE
PHILADELPHIA PA 19143-3143

Billing Date: Jan 26, 2016
Account Number: 2116347424

Meter Detail Meter #: 01726428 Cycle #: 16

Next Meter Read: Feb 23, 2016
Service Point ID: 9972483080

From			To						
Date	Reading	Type	Date	Reading	Type	Difference	Usage (Ccf)	Conversion Factor	Total Therms
12/21/2015	5884	Actual	01/25/2016	6028	Actual	144	144.00	1.0533	151.67

Current Basic Charges

SA ID# 5820860010, 5367 THOMAS AVE
Residential Heat & Domestic

Supply Charges	
Commodity Charge 144 Ccf @ $0.40933	$58.94
Total Supply Charges	$58.94
Delivery Charges	
Customer Charge @ $12.00	$12.00
Distribution Charge 144 Ccf @ $0.73827	$106.31
Distribution System Improvement Charge 5%	$5.92
Gas Cost Adjustment @ -$0.0187	-$2.69
Weather Normalization Adjustment	$18.10
Total Delivery Charges	$139.64
Total Current Billing Charges	$198.58

PGW Messages

Your estimated gas price to compare is $0.39072 per CCF.This may change in March, June, September and December.

Shopping Information Box

When shopping for Natural Gas with a Natural Gas Supplier, please provide the following:

PGW Account #: 2116347424
Service Point ID: 9972483080
Rate Class: General Service Residential
Rate Schedule: GSR

If you are already shopping know your contract expiration date.

PECO
An Exelon Company

Emergency and Repairs: 1-800-841-4141. This is the number to call to report power outages, gas leaks or odors, and safety hazards related to PECO Equipment. For all other business, call 1-800-494-4000

Name: DEREE NORMAN
Account Number: 19273-01508
Phone Number: 267-257-5108
Service Address: 5367 THOMAS AV, PHILADELPHIA

Billing Summary

Bill Date		02/12/2016
Budget bill charges from previous bill		$149.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Late payment charge		$36.34
Total Other Charges		**$1,329.34**
Current Period Charges		
Electric	$25.88	
Budget billing amount		$36.00
Total New Charges	**$25.88**	
Total Amount Due on 03/08/2016		**$1,365.34**

8729-02-0000505-0001-0001007

General Information

Message Center

From PECO:
New charges contain estimated total state taxes of $1.96, including $1.53 for State Gross Receipts Tax.

When paying in person, please bring the entire bill.

(continued on next page)

Return only this portion with your check made payable to PECO. Please write your account number on your check.

PECO
An Exelon Company

☐ **Check here to enroll in Power Pay automatic account debit and complete form on reverse side.**

☐ **Check here to pledge a donation to MEAF and complete form on reverse side.**

To pay by phone call 1-877-432-9384.
A convenience fee will apply.

0000505 01 AV 0.388 **AUTO T3 0 8729 19143-314367 -C02-B1-P00505-I12 5 8

DEREE NORMAN
5367 THOMAS AVE
PHILADELPHIA, PA 19143-3143

Account Number
19273-01508

Payment Receipt Stamp

Payment Amount

Please pay this amount by 03/08/2016 **$1,365.34**

PECO - PAYMENT PROCESSING
PO BOX 37629
PHILADELPHIA PA 19101-0629

1927301508000136534606813653 48

Name: DEREE NORMAN

Account Number: 19273-01508

Next scheduled meter reading: **March 15, 2016**
PECO, 2301 Market Street, Philadelphia, PA 19103-1380. If you have any questions or concerns, please call **1-800-494-4000** before the due date. Si tiene alguna pregunta, favor de llamar al numero **1-800-494-4000** antes de la fecha de vencimiento.

Customer Self Service - Manage Your Account 24/7
- **www.peco.com/ebill** - Go paperless: receive and pay your bill
- **www.peco.com/service** - Start, stop and transfer your service
- **www.peco.com/SmartIdeas** - Save energy and money
- Pay by phone with credit/debit card at **1-877-432-9384** ($2.35 fee)

Your electric price to compare is $0.0836 per kWh. This may change in March, June, September and December. For more information and supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Your **Total Account Balance of $1,176.79** includes your Total Amount Due and all other Arrangement/Agreement balances that are on this account.

Budget Billing Deferred Balance

Last Month's Deferred Balance	$-178.43
+Total Current Charges	$25.88
- Current Budget Billing Amount Due	$36.00
This Month's Deferred Balance	$-188.55

Meter Information

Read Date	Meter Number	Load Type	Reading Type	Meter Reading Previous	Meter Reading Present	Difference	Multiplier X	Usage
02/11	107316622	General Service	Tot kWh	74880 Actual	74995 Actual	115	1	115

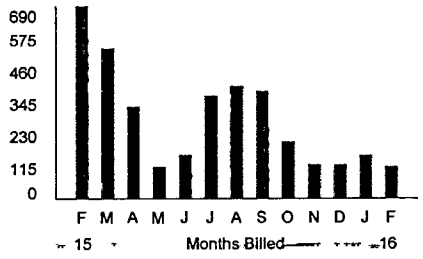
Total kWh Used 115

Electric Residential Service - Current Period Detail

Service 01/12/2016 to 02/11/2016 - 30 days

Customer charge				$8.45
Generation Charges	115 kWh	X	$0.07774	8.94
Transmission Charges	115 kWh	X	0.00580	0.67
Distribution Charges	115 kWh	X	0.06797	7.82
Total Current Charges				**$25.88**

13-Month Usage (Total kWh)



Your Usage Profile

Period	Usage	Avg Daily Usage	Days	Avg Daily Temp
Current Month	**115**	**3.8**	**30**	**36**
Last Month	156	4.6	34	48
Last Year	690	23.0	30	32

Avg kWh per Month	251
Total Annual kWh Usage	3,021

Shopping Information Box

When shopping for a competitive electric/natural gas supplier, please provide the following:
Account number: 19273-01508
Electric Rate: Electric Residential Service
Gas Rate:
If you are purchasing the energy you use from a competitive supplier, it is important to understand the terms of your contract and expiration date.

DO NOT MAIL THIS PORTION WITH YOUR PAYMENT

8729-02-0000505-0002-0001008

PECO
An Exelon Company

Emergency and Repairs: 1-800-841-4141. This is the number to call to report power outages, gas leaks or odors, and safety hazards related to PECO Equipment. For all other business, call 1-800-494-4000

Name: DEREE NORMAN
Account Number: 19273-01508
Phone Number: 267-257-5108
Service Address: 5367 THOMAS AV, PHILADELPHIA

Billing Summary

Bill Date		01/13/2016
Budget bill charges from previous bill		$149.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$119.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$71.00
Budget bill charges from previous bill		$48.00
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Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Budget bill charges from previous bill		$48.00
Late payment charge		$36.34
Total Other Charges		**$1,281.34**

Current Period Charges		
Electric	$30.77	
Budget billing amount		$48.00
Total New Charges	**$30.77**	
Total Amount Due on 02/04/2016		**$1,329.34**

8708-02-0000784-0001-0001567

General Information

Message Center

From PECO:
New charges contain estimated total state taxes of $2.33, including $1.82 for State Gross Receipts Tax.

When paying in person, please bring the entire bill.

(continued on next page)

Return only this portion with your check made payable to PECO. Please write your account number on your check.

PECO
An Exelon Company

☐ **Check here to enroll in Power Pay automatic account debit and complete form on reverse side.**

☐ **Check here to pledge a donation to MEAF and complete form on reverse side.**

To pay by phone call 1-877-432-9384.
A convenience fee will apply.

0000784 01 AV 0.388 **AUTO T4 0 8708 19143-314367 -C02-B1-P00784-I12 6

DEREE NORMAN
5367 THOMAS AVE
PHILADELPHIA, PA 19143-3143

Account Number
19273-01508

Payment Receipt Stamp

Payment Amount

Please pay this amount by 02/04/2016 **$1,329.34**

PECO - PAYMENT PROCESSING
PO BOX 37629
PHILADELPHIA PA 19101-0629

1927301508000132934603513293349

Next scheduled meter reading: **February 15, 2016**
PECO, 2301 Market Street, Philadelphia, PA 19103-1380. If you have any questions or concerns, please call **1-800-494-4000** before the due date. Si tiene alguna pregunta, favor de llamar al numero **1-800-494-4000** antes de la fecha de vencimiento.

Customer Self Service - Manage Your Account 24/7
- **www.peco.com/ebill** - Go paperless: receive and pay your bill
- **www.peco.com/service** - Start, stop and transfer your service
- **www.peco.com/SmartIdeas** - Save energy and money
- Pay by phone with credit/debit card at **1-877-432-9384** ($2.35 fee)

Your electric price to compare is $0.0835 per kWh. This may change in March, June, September and December. For more information and supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

Your **Total Account Balance of $1,150.91** includes your Total Amount Due and all other Arrangement/Agreement balances that are on this account.

Your budget billing amount was reviewed this month and it will change to $36.00 effective with your next bill.

Budget Billing Deferred Balance

Last Month's Deferred Balance	$-161.20
+Total Current Charges	$30.77
- Current Budget Billing Amount Due	$48.00
This Month's Deferred Balance	$-178.43

Meter Information

Read Date	Meter Number	Load Type	Reading Type	Meter Reading Previous	Meter Reading Present	Difference	Multiplier X	Usage
01/12	107316622	General Service	Tot kWh	74724 Actual	74880 Actual	156	1	156

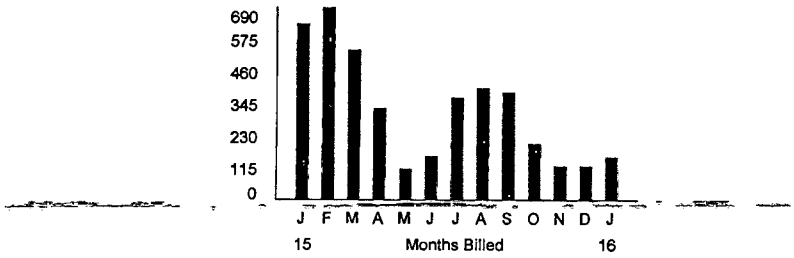
Total kWh Used 156

Electric Residential Service - Current Period Detail

Service 12/09/2015 to 01/12/2016 - 34 days

Customer charge				$7.59
Generation Charges	156 kWh	X	$0.07774	12.13
Transmission Charges	156 kWh	X	0.00580	0.90
Distribution Charges	156 kWh	X	0.06527	10.18
State Tax Adjustment				-0.03
Total Current Charges				**$30.77**

13-Month Usage (Total kWh)



Your Usage Profile

Period	Usage	Avg Daily Usage	Days	Avg Daily Temp
Current Month	**156**	**4.6**	**34**	**48**
Last Month	122	3.9	31	50
Last Year	632	18.6	34	37

Avg kWh per Month	299
Total Annual kWh Usage	3,596

Shopping Information Box

When shopping for a competitive electric/natural gas supplier, please provide the following:
Electric Rate: Electric Residential Service
Account number: 19273-01508
Gas Rate:
If you are purchasing the energy you use from a competitive supplier, it is important to understand the terms of your contract and expiration date.

DO NOT MAIL THIS PORTION WITH YOUR PAYMENT

8708-02-0000784-0002-0001568

EXHIBIT 9

Name: DEREE NORMAN

Account Number: 19273-01508

Meter Information

Read Date	Meter Number	Load Type	Reading Type	Meter Reading Previous	Meter Reading Present	Difference	Multiplier X	Usage
12/31	107316622	General Service	Tot kWh	53134 Actual	53820 Actual	686	1	686
01/12	107316622	General Service	Tot kWh	53820 Actual	54218 Actual	398	1	398

Total kWh Used 686
Total kWh Used 398

Electric Residential Service CAP Opt D - Current Period Detail — Service 12/09/2010 to 12/31/2010 - 22 days

Customer charge				$3.44
Generation Charges	420 kWh	X	$0.03760	15.79
Generation Charges	266 kWh	X	0.09190	24.45
Transmission Charges	420 kWh	X	0.00270	1.13
Transmission Charges	266 kWh	X	0.00550	1.46
Distribution Charges	420 kWh	X	0.02420	10.16
Distribution Charges	266 kWh	X	0.04810	12.79
State Tax Adjustment				-0.08

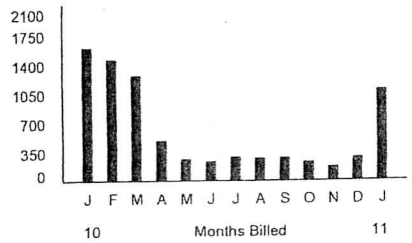
Electric Residential Service CAP Opt D - Current Period Detail — Service 12/31/2010 to 01/12/2011 - 12 days

Customer charge				$2.56
Generation Charges	398 kWh	X	$0.09070	36.10
Alt. Energy Portfolio Standard	398 kWh	X	0.00120	0.48
Transmission Charges	398 kWh	X	0.00730	2.91
Distribution Charges	398 kWh	X	0.05960	23.72
State Tax Adjustment				-0.02
CAP Adjustment				$-27.30

Total Current Charges **$107.59**

Your Electric CAP savings this month is $36.70

13-Month Usage (Total kWh)



Your Usage Profile

Period	Usage	Avg Daily Usage	Days	Avg Daily Temp
Current Month	**1,084**	**31.8**	**34**	**32**
Last Month	282	9.0	31	46
Last Year	1,593	46.8	34	32

Avg kWh per Month	524
Total Annual kWh Usage	6,297

DO NOT MAIL THIS PORTION WITH YOUR PAYMENT

CERTIFICATE OF SERVICE

I, Deree John C. Norman, do hereby certify that on this 14th day of March, 2016, I served a true and correct copy of Complainant's Supplemental Brief in Support of his Motion for Judgment on the Pleadings and Motion for Summary Judgment in addition to all accompanying papers in the above manner to the following via US mail or Electronic delivery.

Shawane L. Lee Esquire
Attorney for Respondent PECO Energy Company
Exelon Business Services
2301Market Street S23-1
Philadelphia, PA 19103
Shawane.Lee@exeloncorp.com

Honorable Mary D. Long
Administrative Judge for the Pa. Public Utility Commission
Pa. Public Utility Commission
Piatt Place, Suite 220
301 5th Ave
Pittsburgh, PA 15222
malong@pa.gov

Date: March 14, 2016

By: /s/ Deree J. Norman
Deree J. Norman