Legal Department

Exelon Business Services Company
2301 Market Street/S23-1
P.O. Box 8699
Philadelphia, PA 19101-8699

Telephone 215.841.4000
Fax 215.568.3389
www.exeloncorp.com

Exelon.
Business Services Company

April 2, 2012

VIA OVERNIGHT MAIL

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

Re: Petition of PECO Energy Company for Approval of its Smart Meter Technology Procurement and Installation Plan

Petition of PECO Energy Company for Expedited Approval of its Dynamic Pricing Plan Vendor Selection and Dynamic Pricing Plan Supplement
Docket No. M-2009-2123944

Dear Secretary Chiavetta:

Enclosed please find an original and three copies of the Petition of PECO Energy Company for Expedited Approval of its Dynamic Pricing Plan Vendor Selection and Dynamic Pricing Plan Supplement. **Please note that Exhibit "A" provided to the Commission contains Confidential Information and should be accorded appropriate treatment by the Commission.**

Copies are being served on the statutory advocates, the Bureau of Investigation and Enforcement and the parties to PECO's Dynamic Pricing Plan proceeding at this docket in accordance with the attached certificate of service. Please do not hesitate to contact me directly should you have any questions or require additional information regarding this filing.

Very truly yours,

Anthony E. Gay

Anthony E. Gay
Associate General Counsel

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PA PUBLIC UTILITY COMMISSION
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cc: Per Certificate of Service

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

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

PETITION OF PECO ENERGY COMPANY
FOR EXPEDITED APPROVAL OF ITS DYNAMIC PRICING PLAN
VENDOR SELECTION AND DYNAMIC PRICING PLAN SUPPLEMENT

I. INTRODUCTION

PECO Energy Company ("PECO" or "the Company") hereby petitions the Pennsylvania Public Utility Commission ("Commission") for expedited approval of PECO's selection of an Electric Generation Supplier ("EGS") as a vendor to provide time-of-use service for PECO's Dynamic Pricing Plan ("Plan"). PECO hereby also petitions the Commission for approval of its Plan supplement.[1] The supplement was developed solely to facilitate the provision of time-of-use ("TOU") service by an EGS and does not materially change the Plan.

PECO has made its vendor selection and Plan supplement to accept and implement the Commission's recommendation that electric distribution companies ("EDCs") contract with EGSs to help satisfy their dynamic rate obligations under Act 129 of 2008, 66 Pa. C.S. § 2807(f) ("Act 129" or the "Act").[2] By this Petition, PECO specifically requests that the Commission, on an expedited basis: (1) approve the EGS vendor selected by PECO to provide the TOU service (the "TOU Supply Vendor") and the separate vendor selected to provide management for the Plan program (the "Program Management Vendor"); (2) find that the Plan as supplemented satisfies the dynamic rate requirements of Act 129 and approve the Plan Supplement; and

[1] The Plan Supplement is Attachment 1 to this Petition.

[2] *See Investigation of Pennsylvania's Retail Electricity Market: Recommendations Regarding Upcoming Default Service Plans*, Docket No. I-2011-2237952 (Order entered December 16, 2011) ("*Retail Market Order*"), at 47-48.

(3) approve PECO's proposed recovery of Plan costs through the Company's Generation Supply Adjustment ("GSA") filings. In support of this Petition, PECO states as follows:

II. BACKGROUND

A. Act 129's Smart Meter Provisions

1. PECO is a corporation duly organized under the laws of the Commonwealth of Pennsylvania with its principal office in Philadelphia, Pennsylvania. PECO provides electric delivery service to approximately 1.6 million customers and natural gas delivery service to approximately 475,000 customers in Pennsylvania.

2. On October 15, 2008, Governor Edward G. Rendell signed Act 129 into law and the Act was subsequently codified in the Pennsylvania Public Utility Code. On June 24, 2009, the Commission entered an order providing standards and guidance for implementing the smart meter requirements of Act 129. *See Smart Meter Procurement and Installation*, Docket No. M-2009-2092655 (Order entered June 24, 2009) ("*Implementation Order*").

3. The Act's smart meter provisions require each EDC with at least 100,000 customers to submit a smart meter technology procurement and installation plan for Commission approval. 66 Pa. C.S. § 2807(f). Each plan must describe the smart meter technologies the EDC proposes to install: 1) upon a customer's request at the customer's expense; 2) in new building construction; and 3) in accordance with a depreciation schedule not to exceed 15 years. *Id.* The Act further defines minimum smart meter technology capabilities and provides for the recovery of all prudent and reasonable smart meter costs. 66 Pa. C.S. §§ 2807(f), (g).

4. Act 129 also requires that specific kinds of rates be offered to customers provided with smart meter technology. Specifically, the Act directed EDCs to submit "one or more proposed time-of-use rates and real-time price plans" to the Commission by January 1, 2010, or

at the end of the applicable generation rate cap period, whichever was later.[3] 66 Pa. C.S. §§ 2807(f)(5).

5. Act 129 defines a time-of-use rate as a "rate that reflects the costs of serving customers during different time periods, including off-peak and on-peak periods, but not as frequently as each hour." *See* 66 Pa. C.S. § 2806.1(m). Act 129 defines a real-time price as a "rate that directly reflects the different cost of energy during each hour." *Id.*

B. PECO's Smart Meter and Dynamic Pricing Plans

6. On August 14, 2009, the Company filed its proposed Smart Meter Plan. Subsequently, a settlement was achieved whereby most issues in the proceeding were resolved. By Order entered May 6, 2010, the Commission approved PECO's Smart Meter Plan.[4] The approved Smart Meter Plan included the Company's procurement and installation of certain smart meter infrastructure, the initial deployment of 600,000 smart meters, and the implementation of appropriate cost recovery mechanisms.

7. The Smart Meter Plan details a two-phase strategy for the deployment of smart meter technology. The first phase 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, specifically relevant to this petition, the development of a program to test customer acceptance of initial dynamic pricing options. Finally, the second phase will complete the deployment of smart meters across PECO's service territory.

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[3] PECO's generation rate cap period ended on December 31, 2010.

[4] *See Petition of PECO Energy Company for Approval of its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123944 (Order entered May 6, 2010) ("*Smart Meter Order*").

8. On October 27, 2009, while PECO's Smart Meter Plan was pending Commission approval, the Company was notified that its application to obtain a $200 million Smart Grid Investment Grant from the Department of Energy ("DOE") to mitigate certain smart meter costs through funds provided under the 2009 American Recovery and Reinvestment Act ("Stimulus Act") was successful.

9. On October 28, 2010, the Company filed its proposed Dynamic Pricing Plan and a settlement was achieved whereby most issues in that proceeding were resolved. The Commission subsequently approved PECO's final Plan by Order entered April 15, 2011 (the "*Dynamic Pricing Order*").[5]

10. The Plan included the implementation of a multi-staged "test and learn" approach to determine effective combinations of dynamic rate design, technology options, marketing, and educational strategies. The "test and learn" program was designed to target approximately 200,000 customers and utilize two different dynamic rate structures: TOU and Critical Peak Pricing ("CPP").[6]

11. On April 29, 2011, the Commission initiated a state-wide investigation with the goal of "making improvements to ensure that a properly functioning and workable competitive retail electricity market exists in the state."[7] As part of the investigation, the Commission issued the *Retail Market Order*, in which it recommended that "EDCs contemplate contracting with an EGS in order to satisfy their [Act 129] TOU requirement." *See Retail Market Order*, p. 47.

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

[6] The CPP rate featured a discounted flat rate for all kWh consumed other than on those occasions when a critical day would be called. Critical days would be called 15 days per summer.

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

III. PECO'S VENDOR SELECTION AND PLAN SUPPLEMENT

A. The Vendor Selection Process

12. Consistent with the Commission's recommendation in the *Retail Market Order,* PECO has selected an EGS vendor to provide TOU service as part of the Plan.

13. To select an EGS as the TOU Supply Vendor for the program, PECO conducted a comprehensive competitive Request for Proposal ("RFP") process. This process began on January 10, 2012, when PECO issued a communications bulletin to all licensed Pennsylvania EGSs notifying them of the RFP.

14. In the bulletin, PECO requested that each interested EGS provide the Company with a non-binding notice of intent to bid by January 17, 2012. A number of EGSs provided timely notices and, on January 24, 2012, the Company issued the RFP to those EGSs.

15. The RFP was comprised of two tasks. The first task covered the provision of the commodity supply ("TOU Supply), including establishing the rate structure, providing the commodity, performing bill calculations, providing bill-ready data, and all associated reporting and administrative tasks and costs.

16. The second task covered the implementation and management of the pilot program ("Program Management"), including marketing, customer service, customer education, equipment installation, call center support and project management. For an EGS, bidding on the TOU Supply task was a prerequisite for bidding on the TOU Program Management task.[8]

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[8] This requirement was necessary to implement the Commission's recommendation that an EGS be considered to help satisfy the EDC's dynamic rate obligations.

17. PECO held a pre-bid conference call with the interested EGSs on January 26, 2012. The EGSs were advised on the call that they should submit a TOU rate structure, as well as an estimate of the development and administration costs associated with the tasks outlined in the RFP's statement of work, no later than February 15, 2012.

18. PECO received three bids for TOU Supply and four bids for Program Management.[9] Each of the bids was evaluated internally by PECO and, after a robust evaluation process, Reliant Energy Northeast LLC ("Reliant") was selected as the Plan's TOU Supply Vendor. In addition, Freeman, Sullivan & Company was selected as the Program Management Vendor. PECO has compiled a detailed description of its vendor selection process and that description is attached as Exhibit "A" hereto.[10]

B. The Plan Supplement

19. PECO's Dynamic Pricing Plan Supplement is Attachment I to this Petition.

20. PECO has supplemented the Plan solely to enable an EGS to provide TOU Supply in lieu of the Company. The modifications fall into three categories: (1) commodity supply; (2) dynamic rate structure; and (3) pilot size and term.

21. First, under the Plan as supplemented, the TOU Supply Vendor (*i.e.*, Reliant) will provide TOU service to customers enrolled in the pilot. Thus, once a customer enrolls in a TOU offer, they will receive generation supply from Reliant during the pilot and will not return to

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[9] Only one supplier provided a bid for both TOU Supply and Program Management. The other Program Management bidders, who are not EGSs, had bid to be PECO's Program Management Vendor before the Commission's *Retail Market Order* was issued and requested that PECO consider their bids for the Plan Supplement.

[10] With the exception of copies provided to the Commission, Exhibit "A" has been redacted to protect confidential vendor information.

PECO for default service when the pilot ends unless the customer fails to choose Reliant or another generation supplier.

22. Second, PECO proposes to offer a single dynamic rate option – a TOU rate – and eliminate the CPP rate that was part of its original Plan. After engaging EGSs and stakeholders in several discussions regarding which of the original dynamic rates should be retained, the Company elected to proceed solely with TOU. PECO made this selection because TOU: (1) has a simple structure that is understandable to customers; and (2) has a lower price risk (*i.e.*, high bill risk) for customers than CPP. PECO has not received any objections from EGSs or stakeholders regarding its selection of the TOU rate.

23. Third, PECO proposes to implement a shorter and more focused pilot to learn about: (1) customer interest in a TOU rate supplied by an EGS; (2) the effectiveness of varying technology offerings and promotional and educational strategies; and (3) the load impacts associated with various TOU rate offer packages.

24. The pilot will launch in the first quarter of 2013 and will run for a one-year period (instead of approximately two years), and will involve one solicitation of up to 140,000 default service customers (instead of multiple solicitations involving around 200,000 customers). The Company believes the modified pilot is appropriate so that it can remain on schedule to meet its Plan launch date of the first quarter of 2013 and maximize its DOE matching grant funding.

25. The modifications made in the Plan Supplement are solely those changes needed to implement the Commission's recommendation that EDCs contract with EGSs to implement their dynamic rate obligations. All other requirements, protections and commitments made in PECO's Dynamic Pricing Plan remain the same.

26. Specifically, consistent with the original Plan and settlement:

- Residential customers (PECO Procurement Class 1) that are enrolled in the Company's Customer Assistance Program ("CAP") will not be eligible for the TOU rate. However, a random sampling of CAP customers will be provided with in-home displays and related educational materials in order to evaluate the effect of near real time information feedback on their energy usage.

- Residential customers who are currently in default on a payment arrangement or who currently are making payments subject to a payment arrangement will not be eligible to enroll in the Plan's TOU rate.

- Small and medium commercial customers (which comprise PECO's Default Service Procurement Classes 2 and 3) will be eligible for the TOU rate.[11]

- PECO will keep stakeholders and the Commission informed regarding Plan implementation through periodic meetings and by issuing a final report after the pilot is completed. The final report will summarize the pilot's results regarding: (1) customer interest in a TOU rate supplied by an EGS; (2) the effectiveness of varying technology offerings and promotional and educational strategies; and (3) the load impacts associated with various TOU rate offer packages. The report will also present PECO's recommendations regarding dynamic rates, technologies, promotional strategies and customer education efforts to be offered to customers receiving smart meters.

27. A summary chart setting forth the Plan Supplement's modifications is attached as Exhibit "B" hereto.

IV. COST RECOVERY AND PLAN BUDGET

28. In the *Dynamic Pricing Order*, the Commission found that costs for the Plan should be recovered from PECO's default service customers through its GSA mechanism. *See Dynamic Pricing Order*, pp. 17-21. PECO is not proposing any changes to the cost recovery and allocation methodologies established in the *Dynamic Pricing Order*.

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[11] Consistent with the original Plan, no additional dynamic pricing options are being proposed for large commercial and industrial customers because, pursuant to PECO's approved Default Service Plan, those customers were offered a dynamic rate structure starting January 1, 2011 - hourly pricing. This hourly pricing offering satisfies Act 129's "real-time price" definition by reflecting the different cost of energy during each hour.

29. In addition, no costs will be assigned to Default Service Procurement Class 4 (large commercial and industrial customers) because those customers will not be eligible to participate in the Plan's TOU rate. Readily attributable Plan costs will be directly assigned to the Default Service Class for which costs are incurred. All other costs that cannot be directly assigned will be allocated to Default Service Classes 1, 2, and 3 in proportion to each class's default service load. *See Dynamic Pricing Order*, pp. 16-17.

30. In the *Dynamic Pricing Order* proceeding, PECO estimated that it would incur approximately $11.6 million in Plan implementation costs. Given the revisions proposed by the Company to comply with the Commission's *Retail Market Order* recommendation the Company now estimates that Plan implementation will cost approximately $7.4 million.

V. REQUEST FOR EXPEDITED CONSIDERATION

31. PECO is planning to launch the TOU pilot the first quarter of 2013 in order to obtain important customer preference, enrollment and load impact data before the universal deployment of smart meters throughout its service territory and to maximize its DOE matching grant funding. Accordingly, the Company is requesting expedited consideration from the Commission so it can meet that launch date.

32. Expedited consideration is needed because a wide range of administrative, marketing and Information Technology projects will need to be completed before customers can be solicited to enroll in one of the pilot's TOU rate offers. PECO must begin working with the TOU Provider and other key vendors as soon as possible, but no later than the end of May 2012, in order to launch the pilot in early 2013.

33. Therefore, PECO is requesting that the Commission approve the Dynamic Pricing Plan vendor selection and supplemental plan by May 10, 2012 so that it will be able to accomplish these critical tasks and launch the pilot in early 2013 as planned.

34. Consistent therewith, PECO proposes the following expedited schedule:

April 2, 2012	Filing of the Petition
April 16, 2012	Other Parties Comments Due
April 23, 2012	Reply Comments Due
May 10, 2012	Commission Order

VI. NOTICE

35. PECO is serving copies of this filing on the Pennsylvania Office of Consumer Advocate, the Pennsylvania Office of Small Business Advocate, the Commission's Bureau of Investigation and Enforcement, and all other parties to the Company's Dynamic Pricing Plan proceeding.

36. Should the Commission conclude that further notice of this filing is appropriate, PECO will provide such additional notice as directed by the Commission.

VII. CONCLUSION

Based upon the foregoing, including the attached exhibits, PECO respectfully requests that the Commission grant this Petition and enter an Order:

(1) Approving the EGS vendor selected by PECO to provide the TOU service and the separate vendor selected to provide management for the Plan program;

(2) Finding that the Plan as supplemented satisfies the dynamic rate requirements of Act 129 and approving the Plan Supplement; and

(3) Approving PECO's proposed recovery of Plan costs through the Company's Generation Supply Adjustment filings.

Respectfully submitted,

Anthony E. Gay

Anthony E. Gay (Pa. No. 74624)
Exelon Business Services Company
2301 Market Street
P.O. Box 8699
Philadelphia, PA 19101-8699
Phone: 215.841.4635
Fax: 215.568.3389
E-mail: anthony.gay@exeloncorp.com

Thomas P. Gadsden, Esquire (Pa. No. 28478)
Brooke E. Leach, Esquire (Pa. No. 204918)
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, PA 19103-2921
Phone: 215.963.5234
Fax: 215.963.5001
E-mail: tgadsden@morganlewis.com
E-mail: bleach@morganlewis.com

For PECO Energy Company

April 2, 2012

Attachment 1

Supplement to:

PECO Energy Company's Initial Dynamic Pricing and Customer Acceptance Plan

April 2012

Table of Contents

EXECUTIVE SUMMARY

This summary outlines modifications to PECO Energy Company's Initial Dynamic Pricing and Customer Acceptance Plan. The Plan is designed to fulfill 1) PECO's obligations under Act 129 of 2008 (the "Act") with respect to dynamic pricing by offering to customers with smart meters the specific kinds of rates required by the Act, 2) PECO's commitments under the provisions of its Department of Energy ("DOE") stimulus grant, and 3) align with the Pennsylvania Public Utility Commission ("PA PUC") Retail Market Investigation recommendations regarding the use or Electric Generation Suppliers ("EGSs") to help fulfill Act 129 requirements. The plan objectives and expected outcomes are essentially unchanged.

PECO's strategy incorporates a PECO branded product (under PECO's Smart Ideas suite), and an EGS supplied commodity. The pilot will run for one year and will include a single rate plus a limited number of technologies, promotional strategies, and customer education. Offers will go out as early as January 2013 to a target population of up to 140,000 customers, timed to follow PECO's initial deployment of smart meters. Overall, PECO anticipates that around four percent of customers in the target population will enroll in a dynamic rate offer. Customer enrollment and load-response data will be collected and evaluated. The results will demonstrate 1) customer interest in each offering, and 2) customer propensity to switch to a supplier within the context of the overall offers. The Plan is designed to quickly understand differences in customer preference among a limited set of alternative offerings in a way that will enable accurate analysis of the results and extensibility of these results to PECO's entire population.

Rates: PECO is proposing to utilize a Time of Use ("TOU") rate supplied by an Electric Generation Supplier ("EGS"). Conceptually, with the TOU rate, each weekday is divided into peak and off-peak periods and customers pay a discounted rate for off-peak usage and a higher rate for peak period usage relative to a standard, non-time-differentiated rate. AMI enabled residential customers who are not enrolled in PECO's Customer Assistance Program will be eligible for the TOU rate as will small and medium commercial and industrial ("S/MC&I") customers.

Technology: PECO will test several technologies to evaluate their impact on a customer's willingness to enroll in and respond to a dynamic rate. These technologies include automated response technologies such as Programmable Communicating Thermostats ("PCTs"); information feedback technologies, such as In Home Displays ("IHDs") and web presentment of data.

Promotion: Comprehensive focus groups will be conducted from among appropriate customer segments to develop the promotional message, educational content, promotional channels, and modes of communications needed to maximize both participation and performance for each offer.

Education: PECO will evaluate the impact of an enhanced information/education approach designed to reinforce load reduction and load shifting behaviors. These can include reminders sent through the mail or email or IHD plus feedback messaging via the web.

The Company's measurement and evaluation plan describes how PECO will collect and evaluate data on its dynamic rate packages. Data analysis will include load impact evaluations and choice modeling based on evaluation of actual data and surveys to determine the level of customer understanding and customer experiences over the course of the pilot.

1 OVERVIEW OF PECO ENERGY COMPANY'S DYNAMIC PRICING AND CUSTOMER ACCEPTANCE PLAN

Note: The primary changes to the overview include the incorporation of an EGS to supply the commodity and the modifications that result from that. The modifications notwithstanding, the pilot maintains its focus on the drivers of customer acceptance. This is accomplished by utilizing comprehensive customer focus groups to develop and verify the marketing messages and customer educational material instead of the original 'test and learn' approach. With the exception of the customer preference track, all other aspects of the approach will remain essentially unchanged. The plan objectives remain unchanged and the expected outcomes are essentially unchanged.

This document comprises a revision to PECO Energy Company's ("PECO") Initial Dynamic Pricing and Customer Acceptance Plan ("Dynamic Pricing Plan" or "Plan") that was approved by the PAPUC on April 14, 2011 in partial fulfillment of the requirements under Pennsylvania Act 129 of 2008 ("Act 129" or the "Act"). Act 129 directed Pennsylvania electric distribution companies ("EDCs") to file with the Commission, by August 14, 2009, a smart meter technology procurement and installation plan. The Act further defines minimum smart meter technology capabilities, including enabling time-of-use rates and real-time price programs, and provides for recovery of all prudent and reasonable costs. PECO's final Smart Meter Plan was approved by the Commission as set forth in the PAPUC's Order entered on May 6, 2010.[1]

PECO's Smart Meter Plan details the Company's two-phase strategy for the deployment of smart meter technology throughout its service territory in accordance with the requirements of Act 129. The first phase 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 up to 600,000 smart meters, and the development of a program to educate customers and implement initial dynamic pricing options. The second phase will complete the deployment of smart meters across PECO's service territory. The cost of deployment of smart meters is being funded in part through receipt of a $200 million grant from the federal government as part of the Department of Energy's ("DOE") Smart Grid Investment Grant program.

In addition to the deployment of smart meters, the Act requires that specific kinds of rates be offered to customers that have been provided with smart meter technology. In particular, the Act requires EDCs to submit "one or more proposed time-of-use rates and

[1] See Petition of PECO Energy Company for Approval of its Smart Meter Technology Procurement and Installation Plan, Docket No. M-2009-2123944.

real-time price plans" by January 1, 2010, or at the end of the applicable generation rate cap period, whichever is later.[2] On April 29, 2011 the PA PUC initiated an investigation into Pennsylvania's retail electricity market[3]. The result of that investigation has been the issuance of a final Order on December 15, 2011 wherein the Commission has recommended that EDCs meet their obligation to offer time of use rates as specified under Act 129 by contracting with an EGS. In response to the retail markets investigation, PECO has revised its plan to partner with an EGS to offer a time-of-use rate as envisioned by the Act in conjunction with PECO's marketing, education and outreach to learn how to effectively promote these types of rates to PECO's customers.

1.1 Plan Objectives

The Plan documented in this filing is designed to achieve the following objectives:

- Comply with Act 129 requirements and DOE commitments;
- Align with the PA PUC Retail Markets Investigation concerning offering time of use rates.
- Understand customer preferences for technology and marketing options and identify which technologies help them better manage their energy costs;
- Understand how to educate and communicate with customers about new options; and
- Identify effective combinations of technologies, education and marketing strategies that could be offered to PECO customers.

1.2 Conceptual Approach to the Plan

PECO's Dynamic Pricing Plan incorporates the unusual feature of having the commodity provided by an EGS (on a competitive bid basis) while having the pilot branded under PECO's Smart Ideas suite of products. The dynamic pricing offering will come from PECO but will identify an EGS as the commodity provider. When a customer enrolls in a dynamic pricing offer, they will also be switched to the EGS supplying the time-of-use service. The pilot results will demonstrate two important things: 1) customer interest in the dynamic price and structure offered, and 2) customer propensity to switch to a supplier within the context of the overall offers. The Plan is designed to quickly understand differences in customer preference among a limited set of alternative offerings in a way that will enable accurate analysis of the results and extensibility of these results to PECO's entire population.

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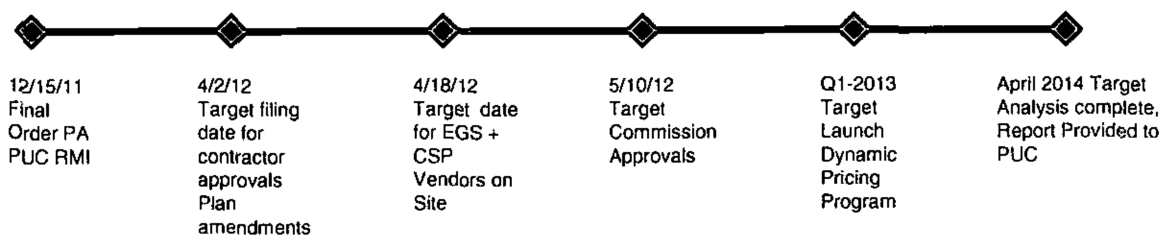
[2] PECO's generation rate cap period ends on December 31, 2010.

[3] See Investigation of Pennsylvania's Retail Electricity Market: Recommendations Regarding updomong Default service plans, Docket No. I-2011-223-7952

PECO hopes to launch the pilot program in January of 2013. Although pilot implementation details are presented later in the Plan; the major milestones envisioned are:



The Plan recognizes that there is a lot of research currently underway and in development, and new technologies are being introduced and refined. As such, it is important to maintain some flexibility concerning precisely what technologies will be offered and tested when offers are made in the first quarter of 2013. Much will be learned and new technologies may arise between now and when the initial offerings will need to be finalized. Accordingly, it is sensible and prudent to take advantage of those lessons learned, as well as new options rather than lock into a full list of specific offerings at this time.

The Plan will involve up to 140,000 customers across eight test cells and appropriate control groups that will receive different marketing offers and technology options. The expected number of customers who accept offers will be much less (estimated to be around 4% in most cases). This will allow sufficient enrollment for PECO to perform statistical evaluations on both enrollment and performance.

1.3 Expected Outcomes of the Plan

PECO expects the following findings from the pilot:

- Residential and small and medium commercial ("S/MC&I") customer preferences for dynamic rates as offered by an EGS vs. default service offered by PECO;
- The effect of an offer technology (IHD or PCT), on enrollment;
- The effect of first year bill protection;
- The effect of combining technology with first year bill protection on enrollment
- The impact on monthly energy consumption for low income (CAP) customers when they have access to near real-time usage information;
- For S/MC&I customers, the impact of combining PCTs with a dynamic rate;
- The average load impacts associated with a time of use rate by customer segment, with and without selected enabling technologies; and

- Key insights (and predictive models) for EGSs who are interested in targeting consumers with dynamic rates and technology promotions.

The insights gained from this project will enable PECO to effectively plan to meet our obligation to offer dynamic pricing to all customers who receive new metering technology (Advanced Metering Infrastructure or AMI meters).

1.4 Plan Organization

The remainder of the Plan is organized as follows:

- Section 2 contains an overview of the time-of-use rate structure that will be offered by the EGS.and the reasons why that rate structure was selected over other rate options;
- Section 3 presents the details of the pilot approach and test cells that will be used. This section includes:
    - Key Principles of Plan Design
    - Timing and Meter Deployment Schedule
    - Customer Education
    - Technology
    - Rate Structure
    - The Customer Acceptance Plan including the summary of offers and promotional strategies
    - Customer Communication Strategy including PECO brand management principles
- Section 4 describes the measurement and evaluation processes that will be employed, assess the load impact of various offers on energy usage patterns, differential enrollment rates and choice analysis, customer surverys, and reporting.
- Section 5 describes the budget and spending plan
- Appendix A provides supplemental information on rate structure selection.
- Appendix B contains supplemental information on the relative effectiveness of alternate promotional features.
- Appendix C contains supplemental information on technology options.
- Appendix D contains supplemental information on the proper use of surveys

2 DESIGNING DYNAMIC RATES AND SIMULATING CUSTOMER IMPACTS

Note: The introduction of an EGS renders this section academic. It is important to note that the insights gained from the analysis of the various dynamic rate options can also apply to similar rate structures offered by an EGS. Through discussions with the EGS and Stakeholder communities regarding the revised approach, it was determined that a single rate structure (TOU), would introduce less risk to the customer in this on-year pilot so the CPP rate structure discussed below as part of the original analysis will not be offered. Also, PECO presented this section as part of its initial dynamic pricing plan; section 2.1 is repeated here for completeness.

At the core of the Plan are the retail rates that will be offered. These rates represent the new and innovative products that, ultimately, customers will decide to either accept or reject. As such, it is important that the rates be well designed and attractive to PECO's customers. There is a wide range of dynamic rate designs that could be offered to PECO's customers, and each option offers a unique set of advantages and disadvantages. Some rate structures are very simple to understand, but may not provide significant opportunities for bill savings. Other designs tie very closely to hourly fluctuations in wholesale market prices, but are likely to be perceived as too risky for customers to enroll. However, a carefully selected and well-designed rate can satisfy a broad range of objectives and provide customers with real incentives to participate and benefit. This sectionr describes the methodology that was used to arrive at PECO's initial dynamic rate structure recommendations.

The sectionr is organized into three parts. The first part describes the rate screening and selection process. The second section provides a detailed look at how customer bills will be affected when enrolling in the new rates. The third part describes the bill impact analysis for both the class average customer and across a representative sample of customers.

2.1 Evaluating Dynamic Pricing Options

There were several steps in selecting the recommended rate options. The first step was to identify the universe of possible rate options for consideration. Then, criteria were established for evaluating these options against the objectives of the Plan. Each rate option was subjectively screened against these criteria based on existing research and the industry experience of The Brattle Group. Based on this initial screening, prototypes of the more attractive rate options were developed and presented at a series of stakeholder meetings. Stakeholder feedback was incorporated into the analysis and the rate prototypes were refined to arrive at the final recommendations.

A broad range of rate options were initially considered in this analysis, ranging from a simple time-of-use ("TOU") rate to a complex critical peak real time pricing ("CP-RTP") rate. These are summarized in Table 2-1.[4]

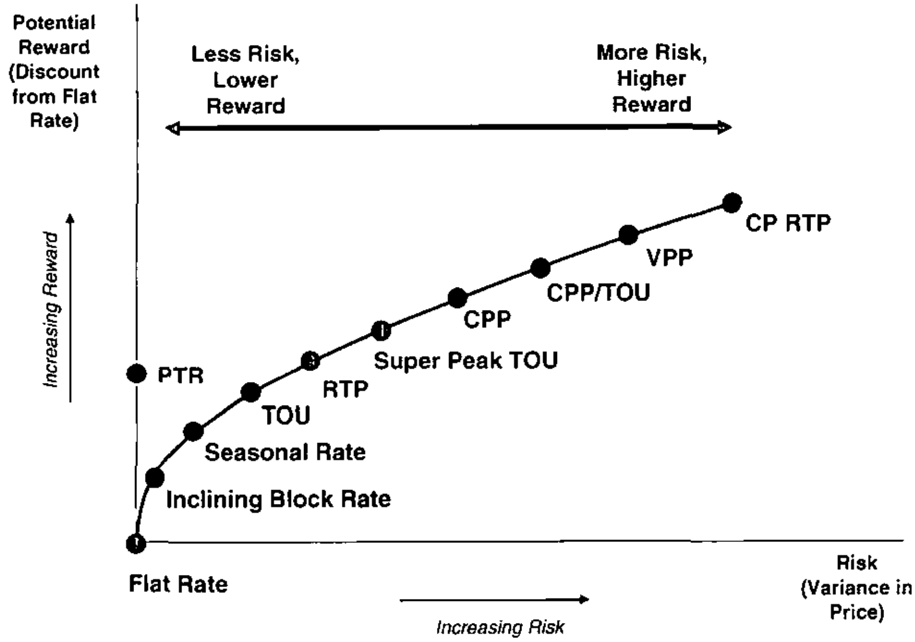
Table 2-1
Rate Options Initially Considered

Rate	Description
Time-of-Use (TOU)	Charges a higher price during all weekday peak hours and a discounted price during off-peak and weekend hours
Super Peak TOU	Similar to the TOU except that the peak price is offered during a much smaller number of hours of the year, leading to a stronger price signal
Inclining Block Rate (IBR)	Customer usage is divided into tiers and usage is charged at higher rates in the higher tiers; meant to encourage conservation
Critical Peak Pricing (CPP)	Customers are charged a higher price during the peak period on a limited number of event days (often 15 or less); the rate is discounted during the remaining hours
Variable Peak Pricing (VPP)	Critical Peak Pricing rate with added variability
CPP-TOU Combination	A TOU rate in which a moderate peak price applies during most peak hours of the year, but a higher peak price applies on limited event days
Peak Time Rebate (PTR)	The existing flat rate combined with a rebate for each unit of reduced demand below a pre-determined baseline estimate during peak times on event days
Real Time Pricing (RTP)	A rate with hourly variation that follows Locational Marginal Pricing (LMPs), but with capacity costs allocated equally across all hours of the year
Critical Peak RTP (CP-RTP)	A rate with hourly variation based on LMPs and with a capacity cost adder focused only during event hours, creating a strong price signal at these times

These rate structures vary across many distinguishing characteristics, such as the type of price signal they provide (higher peak price versus rebate payment for load curtailment), the granularity of the pricing periods (two periods, three periods, or hourly), and the frequency of the pricing periods (every weekday versus during a limited number of days in the summer). However, they all can be organized simply across the spectrum of risk and reward. Generally, those rates offering the most reward (in terms of bill savings potential) are also the most risky (in terms of exposing the customer to the volatility of the wholesale electricity markets). This is illustrated schematically in Figure 2-1.

[4] For more detailed descriptions of each rate option, see Ahmad Faruqui and Ryan Hledik, "The Power of Dynamic Pricing," *The Electricity Journal*, April 2009.

Figure 2-1
Risk-Reward Proposition for Innovative Pricing Structures[5]



In order to evaluate the ability of each rate opportunity to meet PECO's Plan objectives, it was necessary to develop a list of rate evaluation criteria. Five key criteria were established to determine whether the rates were consistent with PECO's objectives and in the best interest of its customers. These five criteria are as follows:

- Simplicity and ease of understanding: Will customers be able to quickly understand the rate? Is it actionable?;
- Customer value proposition: Does the rate provide customers with a significant bill savings opportunity?;
- Retail-wholesale market connection: Does the rate tie the structure directly to the wholesale market; are rates developed consistently with how the Company is procuring power through its approved DSP?;
- Incentive to reduce peak demand: Is the rate expected to produce significant reductions in peak demand?; and
- Incentive for permanent load shifting: Will the rate encourage customers to permanently shift load from higher cost hours to lower cost hours?

A review of the evaluation against the goals suggested four rate designs that initially appeared to be the best candidates for meeting PECO's Plan objectives. These are CPP,

[5]The figure is presented purely for illustrative purposes – it is not intended to be a scaled illustration of potential risks and rewards.

CPP-TOU, PTR, and CP-RTP. The CPP rate would provide a strong demand response signal and create significant bill savings opportunities for customers. The CPP-TOU provides a similar demand response signal, and in addition includes a TOU component that provides an incentive for permanent load shifting and additional bill reduction opportunities. The CP RTP also provides similar opportunities for bill reduction, but with price uncertainty. Finally, the PTR appeared to be an attractive alternative in the sense that it cannot lead to bill increases relative to the existing rate.[6] Further examination of these four rate options led to a preliminary conclusion that both CPP and CPP-TOU be included in the Plan as the top candidates for testing customer response and acceptance.

Note: During the course of the proceeding where PECO's initial dynamic pricing plan was considered, stakeholders recommended addition of a simpler rate structure that was easier to understand and less risky, so it was decided that a plain TOU structure would be added and the CPP-TOU structure would be eliminated.

2.2 Designing the Dynamic Rates

Because PECO has decided to contract with an EGS to offer dynamic rates, it determined that a single rate structure that satisfied the requirements under Act 129 would be the most cost effective approach. Therefore, due to the combination of ease of customer understanding, less customer risk and overall pilot cost, a TOU rate will be the only one offered to all eligible customer segments. The idea of a single TOU rate was vetted with stakeholders in two webinars in November of 2011 where no objections were raised. Also, since the rate will be coming from the competitive market, the structure and price will ideally reflect the EGS's best ideas on how to introduce and price this product to PECO's customers.

The discussion below provides context on qualitative and quantitative aspects of a TOU rate and follows PECO's original filing; however, this is for illustrative purposes only since the actual rate will be supplied by an EGS - not PECO.

Note: The following explanation on rate design and selection was largely provided in the original plan is offered again here as background information from which any similar dynamic rate structure and could be designed and evaluated.

Historical PECO system load and energy prices were used to determine the appropriate peak period and seasonal definition for the dynamic rates. The peak period was designed to balance the tradeoff between customer convenience (i.e., a shorter peak period) with the likelihood of the peak period to capture the highest price and load hours (i.e., a longer

[6] Illustrations of the PTR and CP-RTP are provided in Appendix A (see Figures A-1, A-2 and A-3).

peak period). With these rate characteristics established, the several key principles in rate design were used to establish the prices.

Revenue neutrality: PECO's original TOU rates were designed to be revenue neutral. Revenue neutrality means that, on a customer class basis, in the absence of any change in customer behavior, PECO's revenues would be unaffected by the new rate (relative to revenues that would have been generated under the existing rate).

Cost-based prices: The TOU rate has been designed such that it is directly based on PECO's forward purchases of energy and capacity. The peak-to-off-peak price differential of the rate is derived from PECO's forward market purchases. Also, the peak price reflects the cost of generating capacity as reflected in the PJM capacity auction. The TOU rate has 1044 peak hours per year.

Seasonality: The rate applies year-round and the design provides an added benefit to residential heating customers, who tend to have higher loads in winter months when they will experience the off-peak discount relative to the otherwise applicable rate.

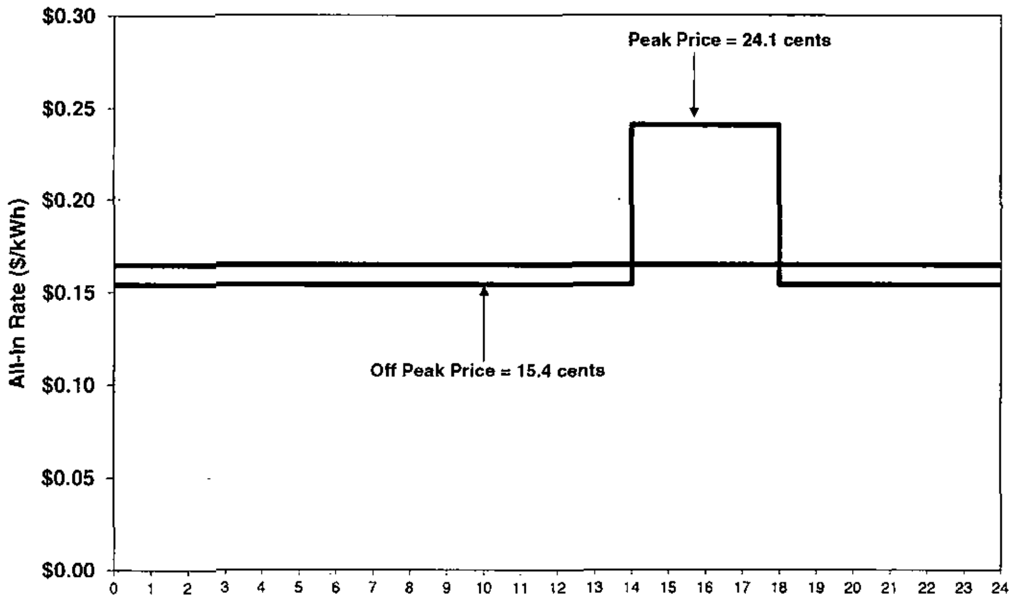
2.2.1 Illustrative TOU Rate

The TOU rate structure for residential customers as originally filed is illustrated in Figure 2-2 and is composed of a moderate peak rate of approximately $0.24.1/kWh during 1,044 hours of the year with an off-peak discount during the other hours of approximately 5% off of the default price. The peak price will apply during all non-holiday weekdays throughout the year, and the off-peak price will apply during all other hours.

Note: the energy supply will be offered by an EGS so the exact TOU structure and price are likely to differ from PECO's original filing..

Figure 2-2

Illustrative TOU Rate for Residential Class - Year-Round



Comparable illustrations for small and medium commercial customers are shown in Figures 2-3 and 2-4 below. With an EGS supplied commodity there will be no difference between small and medium commercial/industrial customers.

Figure 2-3

Illustrative TOU Rate for Small C&I Class - Year-Round

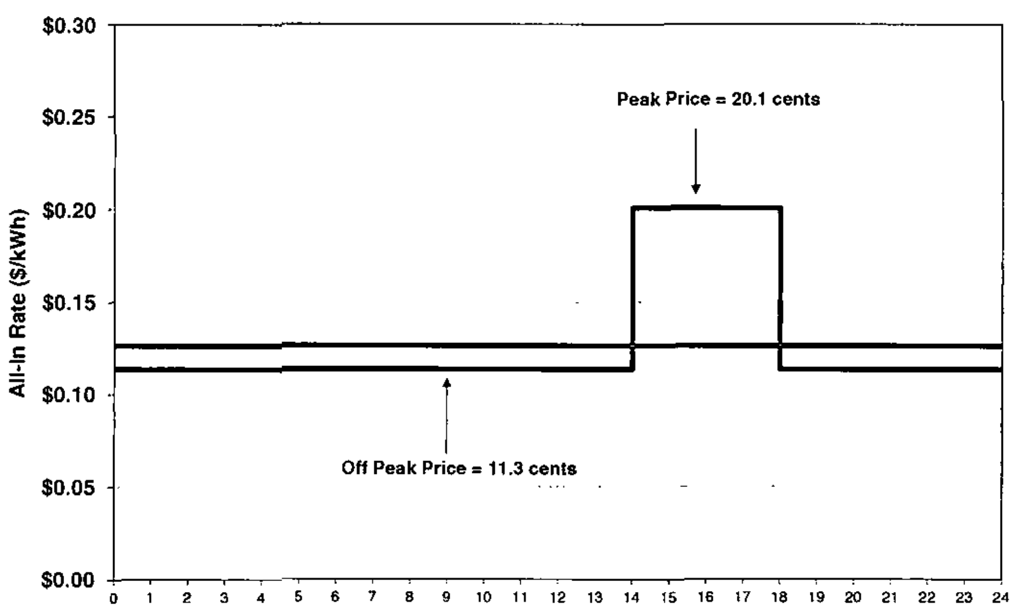
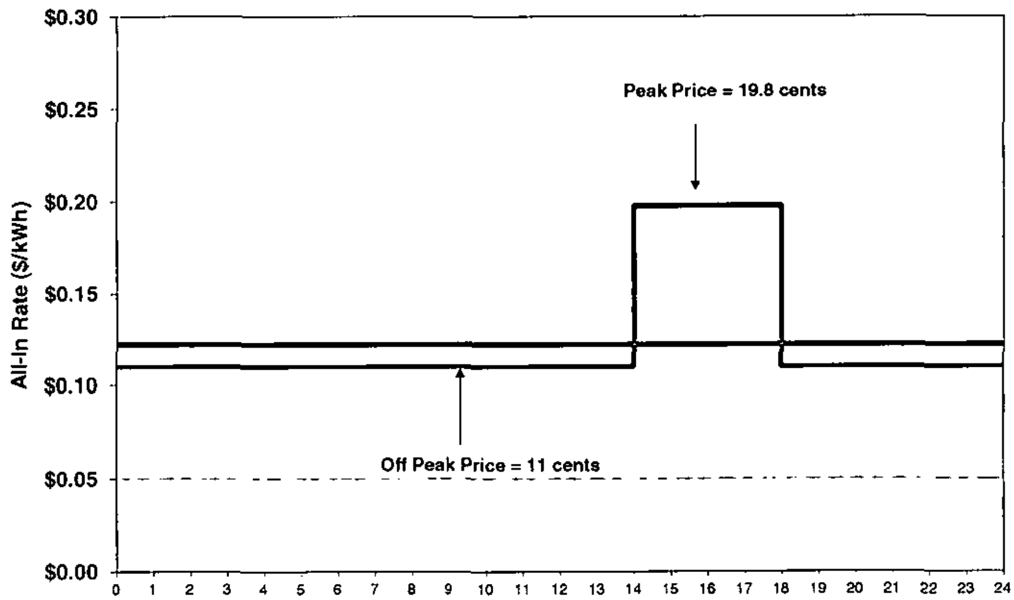


Figure 2-4

Illustrative TOU Rate for Medium C&I Class - Year-Round

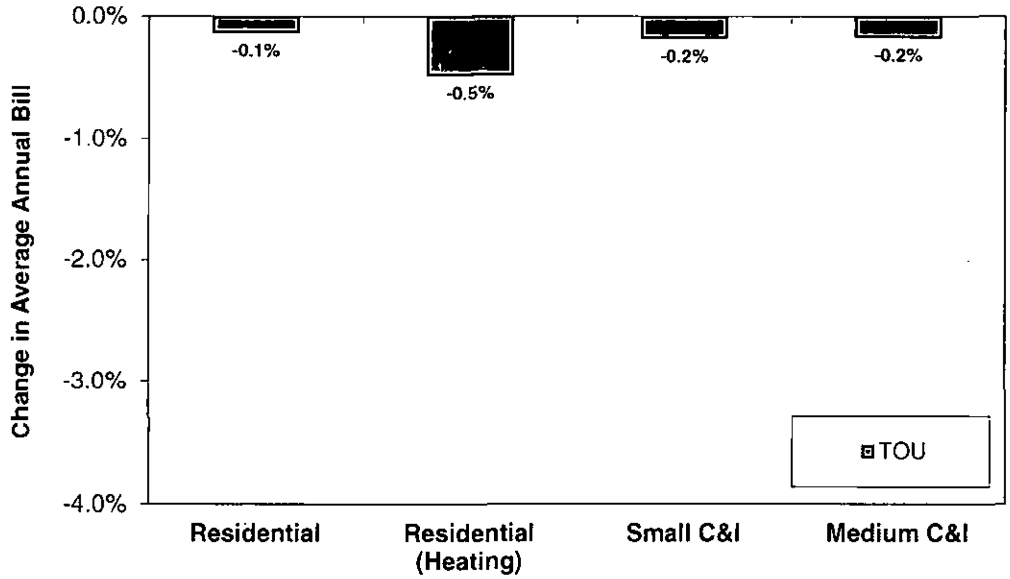


2.3 Understanding Customer Bill Impacts

When faced with a TOU rate, it is expected that customers will shift load to save money on their bill. A calculation of the class average customer's bill before and after price response provides an estimate of savings customers can expect. For the residential class, the TOU rates, as originally filed, were expected to lead to annual bill reductions of roughly 0.1%. , Residential heating customers are expected to see greater annual decreases due to their usage pattern of higher consumption during the winter months and off-peak hours. For the small and medium commercial classes the average annual bill reductions of 0.2% were expected. The estimated annual savings for each class are shown in Figure 2-5.

Figure 2-5

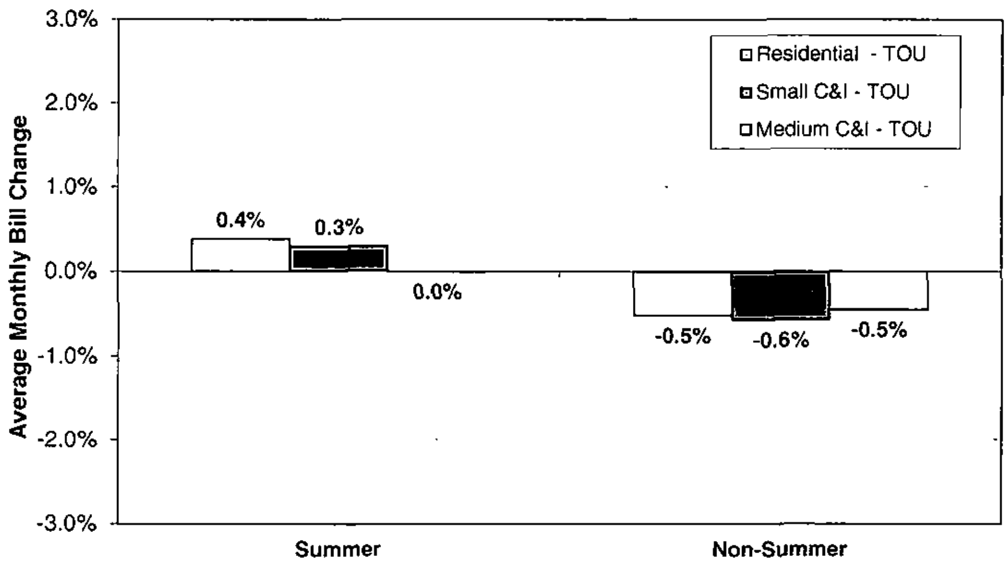
Projected Change in Average Annual Bill



Because of normal usage patterns in the summer vs. the winter, bill impacts are not spread evenly throughout the year but under the original proposed rate and structure are expected to be small. The expected bill impact is an increase in the four summer months and a decrease in the eight non-summer months (averaging out to the annual bill reductions shown previously). Figure 2-6 shows that the average 4-month summer bill increase should be around 0.4% for the residential class, balanced out by a bill decrease of 0.5% during the 8 non-summer months. For the S/MC&I customers, the summer bill increase could be as high as 0.3%, balanced out by bill decreases during the non-summer months of approximately 0.6%.

Figure 2-6

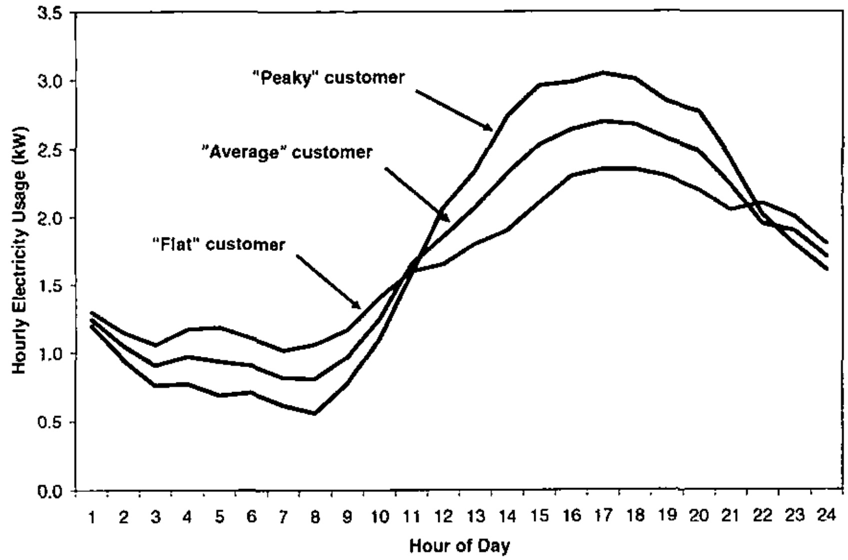
Average Seasonal Bill Impacts After Customer Response



*Summer months include June through September; non-summer months include October through May

Analyzing expected bill impacts for the average customer only tells part of the story. Due to the revenue neutral design of the dynamic rates, the average customer is likely to experience modest bill changes. However, load profiles vary significantly across customers. Some customers tend to be "peaky," with higher consumption during the peak hours of the day, while other customers tend to have flatter load shapes. These different types of load shapes are illustrated in Figure 2-7.

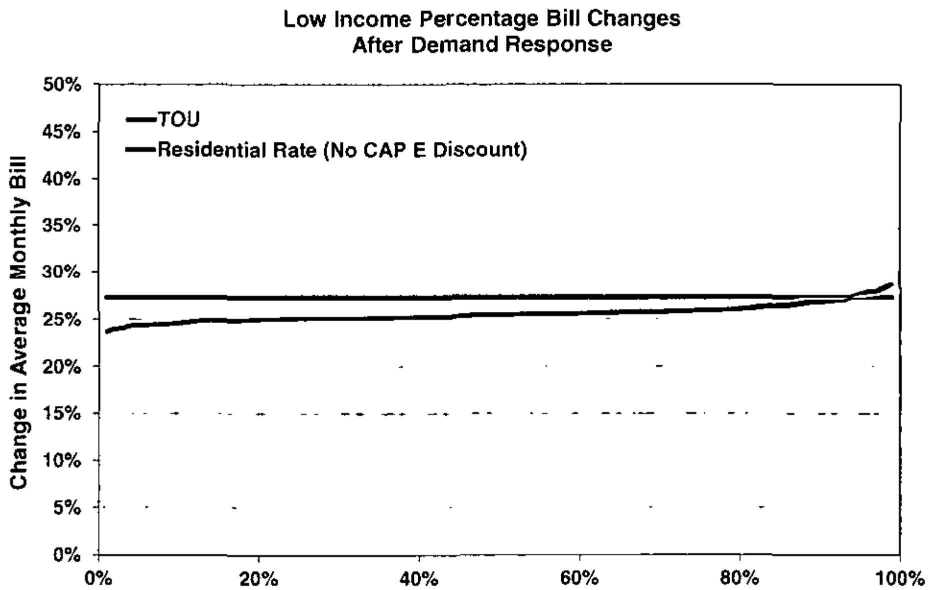
Figure 2-7
Average, Flat, and Peaky Load Profiles



The bill impact of a dynamic rate on an individual customer is partly a function of the customer's load profile and their individual response to the rate. Assuming no behavorial or usage changes, under a TOU rate structure, customers with higher-than-average consumption in the peak hours will tend to experience bill increases, while customers with flatter load shapes will tend to experience bill decreases. On an annual basis, the likely maximum average bill savings for residential customers with advantageous load profiles would have had approximately 3%. Also, it is estimated that 60% of all customers on the TOU rate (as originally filed by PECO), would have lower bills than they would have had on the existing flat rate. For S/M C&I customers, the maximum average bill savings on the TOU rate could be approximately 5% while almost 60% of those customers are expected to experience a bill decrease.

Another important issue under consideration in the pilot is the impact that time-varying rates could have on low-income customers. Recent pilot studies have shown that low-income customers respond to dynamic rates, although typically less so than other residential customers. PECO has a very strong CAP program for the lowest income customers in its territory. Analysis shows that there are no customers currently on any of the CAP rates that would experience a bill savings if they were moved from the discounted CAP rate to an un-discounted dynamic price. The discounts provided to PECO CAP customers far exceed any potential savings that CAP customers could achieve under dynamic pricing rates. An example is shown in Figure 2-8 where CAP E customers (those who qualify for the smallest discount), would experience an average bill increase of 26% with PECO's originally filed TOU rate, even after shifting their load.[7] In light of this analysis PECO has decided that CAP customers will not be eligible for the Plan's dynamic rates.

Figure 2-8
Distribution of Dynamic Bill Impacts:



7 These estimates assume that a CAP customer would be moved from the CAP rate to the regular residential rate and then the dynamic rate applied to their load. (comment: this footnote is misplaced and belongs on page 18, will be corrected in final version)

3 PECO'S DYNAMIC PRICING OFFERS

Note: With the introduction of an EGS there is no longer a need for test and learn, in fact, test and learn as originally envisioned would produce results of very narrow usefulness unless it was repeated for every EGS serving customers in the PECO territory. The approach to understand customer preferences to marketing messages and educational messages will be accomplished through focus groups instead of actual choice data. Also, the introduction of an EGS leads to simplification to one rate structure. Combined these changes have the impact of reducing the test cells from approximately 28 to 8 while maintaining statistically significant results for enrollment outcomes and performance outcomes as long as sufficient enrollment is achieved. The essential learning aspects PECO is attempting to learn about customer interest in dynamic pricing and their response to it remain unchanged. Also, the plan incorporates sections D (Payment arrangements for payment troubled customers) and E (Use of surveys for vulnerable customers to gain greater understanding of their particular experiences in responding to pilot program rates).

This section provides a brief plan overview and describes the approach that PECO will use to carry out the pilot, that is divided into seven sections: 1) Key Principles of Plan Design, 2) Timeing and Meter Deployment Schedule, 3) Customer Education, 4) Technology, 5) Rate Structure, 6) The Customer Acceptance Plan, and 7) Customer Communication Strategy.

Offers will be made to residential and S/MC&I customers. There will be a limited number of alternative packages offered to residential customers that include an IHD, a PCT, and/or first year bill protection. There will be a single package offered to S/MC&I customers that includes a PCT. Each of the planned test cells are described below in Section 3.6 The Customer Acceptance Plan, Table 3-2. The customer education and marketing materials will be developed through comprehensive customer focus groups to determine effective messages for residential and commercial customers. Customer enrollment rates and load-response data will be collected and evaluated. Insights gained from analyzing the results of the offer will be included in the final report due in April of 2014.

3.1 Key Principles of Plan Design

The results obtained from each of the first six test cell will be used to estimate what the likely results would be if the same approach were to be offered to PECO's entire population of customers; therefore, each of these test cells must be representative of PECO's residential customer population as a whole. PECO has conducted a demographic analysis of its population and has identified areas where taken as a whole do provide the desired representation. Customers for each test cell will be randomly selected from among these areas for each test cell to ensure proper demographic representation. The CAP test cell and the S/MC&I test cell will contain random selections of customers from those populations and an analysis of results will also provide estimates of the impact from a larger population.

In order to maintain internal validity, the approach to be used in this pilot involves selecting a separate control group for each representative group of customers. PECO anticipates needing a minimum of three control groups for the residential customers and one for the commercial customers. This approach is needed when the treatment is in effect most or all of the time, such as for TOU rates. To estimate impacts in these situations, customers will be asked to participate and then will be randomly assigned to treatment and control groups. This can be done by telling customers during the recruitment process that there are a limited number of treatments available and people will be provided with the treatment on a lottery process; and then enough people will be recruited to compile a control group from the volunteers.

The control group will also be used to determine whether a treatment has caused a change in usage, The control group usage and behavior will be compared to treatment group usage and behavior to estimate what usage would have been for customers who accept the treatment if the treatment was not in effect. Control groups will also be useful in analyzing behavioral / attitudinal differences between treatment and control in the post pilot behavioral analysis.

3.2 Timing and Meter Deployment Schedule

Various offers will be made to (i) residential customers using direct mail and (ii) S/MC&I customers using telemarketing beginning as early as the fourth quarter of 2012.

PECO's dynamic pricing offerings will follow meter deployment. PECO estimates that there will be at least 100,000 smart meters in place by fall 2012 and that the mix of customers who will have smart meters by this time will be reasonably representative of the broader population of customers who will ultimately receive smart meters.

3.3 Customer Education

All customers in all treatments will receive a basic level of education that is appropriate for the treatment offered through the program website as coordinated with the PECO web presentment website. There, customers will be able to look at their usage patterns and read tips for maximizing savings. PECO envisions that approximately one-half of the enrolled customers would be chosen for a form of enhanced educational treatment to allow them to make more informed energy usage decisions. The enhanced educational package could involve providing customers with practical examples of specific behaviors that other consumers have engaged in when facing dynamic rates or detailed load shape analysis designed, for example, to determine the weather-sensitive portion of load as input to provide guidance concerning air-conditioning use. Since many customers may not have a good idea of what activities use the most energy in general, or during peak periods, the intent is to show customers how they can take control of their energy usage with actions which can maximize bill savings. PECO plans to evaluate the impact of enhanced information treatments to determine their impact on load and energy consumption.

Unlike factors that affect enrollment, determining the effect of enhanced information on load reduction and energy use requires a comparison between treatment and control customers for at least 6 months after the treatment is in effect. Therefore, the enhanced education will begin prior to the summer of 2013.

3.4 Technology

PECO plans to evaluate a variety of technologies within the Plan. Since the rate of advancement in this area is moving rapidly, it would not be prudent to decide exactly what will be offered in the Plan at this time. In general, the technology categories to be included are:

- Notice technology (e.g. messages sent to IHDs or PCTs)
- Control technology (e.g. PCTs); and
- Information feedback technology (e.g., IHDs, Web presentation of data and usage patterns). This will be of particular interest with the CAP customers as described above in section 3.6.1 below.

The analysis and evaluation will include the impact of technology on customers' acceptance of a dynamic rate, the impact on load and usage, and general customer awareness of energy consumption.

3.5 Rate Structure

As delineated in Section 2, PECO has elected to contract with an EGS through a competitive bid process to supply commodity service using a TOU rate structure to all eligible customers who enroll in the pilot. The EGS will have the opportunity to utilize the TOU structure initially filed by PECO, or an alternative structure presented during the competitive bid process. The dynamic rate will not be offered to CAP customers as described in section 2.3 above.

3.6 The Customer Acceptance Plan

This section summarizes the tests that will be conducted in the pilot. PECO will utilize comprehensive focus groups to develop the messaging that will likely evaluate:

- Promotional message (e.g., energy savings, reliability, control, etc.);
- Educational content of material (e.g., how to explain time-based pricing);
- Mode (e.g., direct mail, telephone, in person, community organization, web portal, etc.);
- Format of promotional material (e.g., business letter, three-fold glossy brochure, etc.);

Recent research by Freeman Sullivan Company ("FSC"), indicates that several of these factors can significantly influence enrollment rates.[8] Appendix B contains a high-level summary of various tests of promotional options conducted by PG&E in conjunction with marketing that company's SmartRate tariff.

The revised approach is a single stage offering to customers in eight treatment groups made to customers in the fall of 2012 for delivery of commodity during calendar year 2013. Although PECO expects to learn a great deal through the pilot, the original "test and learn" approach would no longer provide meaningful data since supply will be secured through an EGS.

The total number of customers that will receive offers across all test cells is estimated to be up to 140,000*. Sample sizes are a function of several factors, including expected enrollment rates and the magnitude of the impact that must be estimated. The peak to off-peak price ratio will play the determining roll in how many customers will ultimately receive solicitations. If the ratio is low (e.g. 1.1 to 1 resulting from an 11 cents per kWh peak price and a 10 cents per kWh off-peak price, then more enrollees will be needed to detect the differences in performance than if the ratio was say 2:1 (20 cents per kWh peak vs. 10 cents per kWh off-peak). The exact number of solicitations in each cell will be determined after the final peak and off-peak prices are known.

Given all of the relevant research currently underway or being planned in the industry, useful insights may become available prior to project launch that can be used to optimize sample sizes. For planning purposes, a sample size of 5,000 customers has been used for most test cells. This should be large enough to detect differential enrollment rates of a

[8] Stephen S. George, Josh Bode, Mike Perry and Andrew Goett. *2009 Load Impact Evaluation for Pacific Gas and Electric Company's Residential SmartRate™—Peak Day Pricing and TOU Tariffs and SmartAC Program—Volume 2: Ex Ante Load Impacts*. Freeman, Sullivan & Co., 2009.

magnitude of interest. Finally, the total number of customers recruited may need to be larger because of the need to separate customers who accept the offer into treatment and control groups in order to develop unbiased estimates of load impacts for these treatment options.

The roughly 600,000 accounts that receive smart meters during PECO's initial AMI deployment will be reasonably representative of the overall PECO population, therefore, PECO would expect to have a distribution of customers across various segments of interest similar to that shown in Table 3-1.

Table 3-1
Number of Accounts Available for Inclusion in the Pilot

Customer Segment	Q1 2013	Initial Deployment
Rate R	62,500	408,000
Rate R-H	9,000	54,000
CAP	13,000	78,000
S/MC&I	10,000	60,000
Approximate # of Installed Meters	100,000	600,000

3.6.1 Summary of Offers

All plan impacts and customer preferences will be evaluated within the context of the alternatives to be offered to the customers as listed in Table 3-2 below.

Table 3-2
Customer Offers Summary

Description	IHD	PCT	Est. No. of Solicitations	Estimated Enrollment
#1) Residential: standard promotional letter explaining the offer, benefits, and how to enroll			5,000	200
#2) Standard offer #1 above plus the offer of an IHD	200		5,000	200
#3) Standard offer #1 above plus the offer of a PCT		200	5,000	200
#4) Standard offer #1 above plus the offer of first year bill protection			5,000	200
#5) Offers #2 and #4 combined	200		5,000	200
#6) Offers #3 and #4 combined		200	5,000	200
#7) CAP customer outreach through community groups offering IHD's	200		5,000	200
#8) Small/Medium C&I: Standard promotional message delivered via telemarketing plus PCT		200	5,000	200
Totals	**600**	**600**	**40,000**	**1600**

**Note: Table 3-2 represents a base level of customer outreach without consideration for control groups or lower enrollment rates. Therefore, it is likely that more than 80,000 customer will need to be contacted to enroll enough customers in both test cells and control groups to achieve numbers large enough for statistical significance.*

When comparing enrollment rates for offers that do and do not include PCTs, it will be important to screen for central air conditioning ownership, as only customers with central air conditioning are eligible for PCTs whereas all customers can accept an offer. This may require enrolling more customers than would otherwise be needed.so that statistically meaningful comparisons can be made for households with and without central air conditioning.

Customers who had previously enrolled in PECO's direct load control program will not be excluded from the pilot offerings but will be tracked to evaluate differences in enrollment rates and performance. These are self-selected customers, all of whom have central air conditioning and who already have expressed an interest in managing their energy costs. As discussed in Appendix B, prior research conducted by FSC found that customers that already have enabling technology sign up at much higher rates than other customers. Enrollment rates for these customers will be compared with the enrollment rate for the group as a whole.

CAP customers will not be eligible to enroll in a dynamic rate but PECO will offer a limited number of these customers an IHD in order to further understand the impact of providing near real time usage information on these customers' total usage. This will be accomplished through community outreach efforts targeted at low-income communities. PECO will work closely with these groups to educate them about the offer of an IHD that they will be marketing, provide them with relevant materials of how to effectively utilize the technology to manage their energy usage and electric bills, and otherwise ensure that this treatment option is successfully executed.

Prior research suggests that PCTs may play an even more important role in aiding price-driven demand response among small commercial customers than they do among residential customers. As such, PECO plans to test the impact of PCTs on S/MC&I enrollment and demand response. Therefore, S/MC&I customers will be offered a TOU rate with a promotional outreach via telemarketing and a PCT.

3.6.2 Promotional Strategy

Three promotional strategies will be evaluated pertaining to enrollment: 1) the impact of offering an IHD, 2) the impact of offering a PCT, and 3) the impact of offering first-year bill protection. Combinations of 1 and 3 and 2 and 3 above will also be evaluated. The enrollment findings combined with customer load reductions will help determine the effectiveness of utilizing one or all of these strategies for PECO's remaining AMI enabled customers. Understanding how best to attract customers to sign up for time varying rates is one of the most important and least studied areas of research in the industry. Fortunately, it is also something that can be assessed rather quickly as it is possible to promote the tariffs of interest using a variety of different strategies simultaneously and it only takes a few weeks or, at most, a couple of months to determine which promotional packages are working better than others.

The effectiveness of each promotional strategy for offers made to most residential customers will be determined relative to a standard residential promotional package developed by a combination of prior research and customer focus groups Two randomly selected groups (a standard package group and a group that has one of the features described above; i.e. an IHD, PCT, 1st year bill protection, etc.), will be made an offer with only the distinct features being different; all other features of the marketing package will be the same. The differential enrollment rates between these two groups will provide a precise measure of the effect of the feature on enrollment.

The standard offer strategy for S/MC&I customers will differ from that of residential customers because direct mail solicitation is largely ineffective with business customers. Given this, the plan is to use telephone solicitation as part of the standard promotional package. In addition, the standard package will also include the offer of a PCT.

3.6.3 Settlement Agreement Activities

Residential customers who are currently in default on a payment arrangement or who currently are making payments subject to a payment arrangement will not be eligible to enroll in the Plan's CPP and TOU rates. If PECO is contacted by a residential customer that has enrolled in the Plan's CPP or TOU rate and is experiencing difficulty making timely bill payments, the Company shall take the following steps:

a. Move the customer to a separate research test cell focused on payment troubled customers.

b. Offer the customer first year bill protection for the entire first 12 months on the CPP or TOU rate if they are not already in a test cell that offers it.

c. Offer the customer a payment agreement specific to any arrearages incurred while enrolled on the CPP or TOU rate that is suitable under the Company's guidelines for payment arrangements for the customer's circumstance.

d. Prior to the expiration of the bill protection feature, communicate and discuss with the customer whether to remain on the CPP or TOU rate given the payment problems encountered by the customer.

PECO will ask a representative sample of customers who decided against enrolling in the TOU or CPP rates the reason for the decision against enrollment. PECO will maintain and report on the information regarding these reasons.

PECO will also monitor the drop-out rates for CPP and TOU customers as the Plan is implemented and work with the stakeholder group to determine whether surveying those customers could provide valuable information regarding the programs.

PECO will perform a survey of or conduct at least three focus groups with vulnerable customers in the pilot program to gain further understanding of the experiences of vulnerable customers in responding to the pilot program rates. Information to be collected shall include the efforts or strategies that customers use to respond to the pilot program rates. PECO should seek to identify a group of customers, including customers with low to moderate incomes, customers of advanced age, and customers with disability, for this purpose. PECO shall work with its stakeholder group to determine other information that should be collected as part of this process.

3.7 Customer Communication Strategy

PECO's communication strategy will be developed in detail at a later date, but it will adhere to the following guidelines:

- It will address both smart meter technology deployment and the specific offers of rates and technologies that will be made as part of the Dynamic Pricing Plan, as well as all of the variations in promotional strategies that will be tested.
- The communication strategy must allow for precise targeting of specific offers to specific customers. It will be important to put systems in place to ensure that it is possible to track how each participant heard about the option that they enroll in, while also using broad-based tactics for general education.
- The various offers made as part of the Plan will be made in a way that is consistent with other associated messages and formats that PECO is using at the time. This is important as customers do not distinguish between similar messages or programs such as energy efficiency, demand response, or direct load control. Separate branding would likely to be more costly and confusing than enlightening.

3.7.1 PECO Brand Management Principles

Note: To protect and enhance PECO's brand positioning in the marketplace, these brand management principles will be strictly adhered to by the EGS/Implementation Vendor(s) and monitored by PECO

PECO's Role

- All language used in all customer communications and touch points will be developed and approved by PECO Communications in conjunction with PECO Marketing
- Customers will access the program website via PECO.com to ensure brand management content alignment
- Management of a single call center with support of all aspects of the program

- Customer information and acquisition
- Customer general and program billing inquiries
- Technology installation appointment scheduling and support
- Customer de-enrollment
- Pilot close-out

EGSs Role

- Provide energy commodity for acquired customers
- Provide rate and billing information
- Inclusion of program name and call center number on monthly bill
- Opportunity to market additional offers to customers 90 – days prior to pilot completion

Exclusions

- EGS will not be allowed to cross-market and/or up-sell for the length of the pilot
- EGS will not be allowed to advertise or leverage partnership with PECO

3.8 Plan Closeout Activities

The EGS will have the obligation to communicate to the enrolled customers beginning approximately 90 days prior to the end of the pilot regarding the customers' options following the pilot. The customer will be presented with options that include: staying with the EGS on a rate plan that the EGS chooses to offer, switching to another EGS (providing them the PA Power Switch web site address), or returning to PECO on the applicable default rate. If the customer takes no action, they will automatically revert to PECO default service beginning with the relative month immediately following the pilot close.

4 MEASUREMENT AND EVALUATION

Note: Changes to the M&E section are minor in that the impact assessment must be done utilizing a control group for each distinct area of testing. Therefore, PECO will not use the participants as their own controls (e.g. within-subjects, interrupted time-series design) as previously proposed for customers on the CPP rate. The impact evaluation will follow the same rigor and procedures as previously envisioned.

This section describes the measurement and evaluation ("M&E") activities that PECO will use to estimate the load impacts that result from the various offers, and to determine the cost-effectiveness associated with each offer. M&E activities are vital to providing an accurate assessment of the pilot results.

The M&E plan is comprised of the following primary work streams:

- Load impact evaluations for each test cell;
- Assessment of the enrollment rates associated with each test cell that will allow for estimation of the likelihood that a customer will enroll on a rate as a function of being offered a dynamic rate, customer characteristics and promotional features;
- Surveys to determine customer understanding of and satisfaction with rate and technologies, the actions customers take in response to such rates and how selected customers use the technologies provided to them (e.g., IHDs);
- Analysis to determine effective combinations of rate, technology, promotional features and education; and
- Reporting activities that include holding periodic stakeholder meetings and preparing a final report to discuss Plan findings and recommendations for next steps.

A summary of how the M&E activities might be conducted is provided below. This is useful to ensure that the research design and budgets are suitable. However, PECO intends to contract out the M&E work and to allow bidders to propose alternative methods to those described below.

4.1 Load Impact Evaluation

The evaluation plan will estimate load impacts for the eight rate/ technology/ education/ target population combinations, as summarized below:

A. A TOU tariff offered to residential customers with standard promotion and education package; (Basic Package)

B. A Basic Package offered to residential customers along with an IHD;

C. A Basic Package offered to residential customers along with a PCT;

D. A Basic Package offered to residential customers along with first-year bill protection;
E. A Basic Package offered to residential customers along with an IHD and first-year bill protection;
F. A Basic Package offered to residential customers along with a PCT and first-year bill protection;
G. An IHD offered to CAP customers (with no time-varying tariff);
H. A TOU tariff offered to S/MC&I customers with promotion and education offered via telephone along with a PCT;
I. An evaluation of enhanced educational efforts;
J. Inclusion of control groups in the analysis.

For evaluations in this pilot, treatments are in effect on all or most days, so the impact analysis must be based on comparisons between the treatment and the external control group and alternative estimation methods such as panel regressions. Special care must be taken to obtain a control group that is not biased by selection or other factors that may call into question the internal validity of the impact estimates. Table 4-1contains a summary of the evaluation approach that will be taken for each of the options outlined above.

Table 4-1
Load Impact Evaluation Methods and Output

Treatment	Approach	Output	Timing
A. TOU for all customers in the pilot except CAP	1. Estimate average load impact by hour of day and/or for each rate period (peak and off-peak) for the average customer in each treatment cell using panel regressions with pooled data from treatment and control groups	1. Average impact per hour or by rate period under various weather conditions	Q1 2014
B. IHD for CAP	1. Focus is on energy use, not demand response, so can use pretreatment period data on monthly kWh usage in analysis. Analysis will be based on panel regression using data from treatment and control customers	1. Change in monthly energy use for average CAP customer with IHD	Q1 2014

4.2 Differential Enrollment Rates and Choice Analysis

The simple calculation and comparison of acceptance and/or enrollment rates will be quite useful for assessing customer preferences for the selected rate option, determining if certain targeted groups (e.g., load control participants, electric space heat customers, or other demographically identifiable sub-groups) have significantly different take rates, and for identifying which promotional strategies are clear winners and losers. However, an even more enlightening and useful type of analysis involves using multivariate statistical regression to estimate a model of the probability that a customer will accept an offer as a function of both the offer features (e.g., rate type, promotional features) and customer characteristics (e.g., air conditioning ownership, income, etc.).[9] Such models can be used to project future enrollment and, very importantly, to determine how enrollment might vary based on differences in customer characteristics, which is quite useful for developing targeting strategies for future promotional campaigns.

PECO will use both comparative statistics and choice modeling to analyze enrollment rates and determine the key drivers of customer acceptance.

4.3 Customer Surveys

PECO will employ surveys to assess satisfaction with each rate, technology and educational option to which customers are exposed, determine actions taken by customers in response to the pricing and information provided, monitor customer perceptions of comfort and/or inconvenience associated with critical peak events, and determine how customers use particular technologies (e.g., are they using IHDs to monitor usage toward goals, or in some other manner?). PECO will also use surveys to assess the effectiveness of our marketing/educational efforts by assessing whether customers actually understand the concepts of time varying pricing and load response.

The survey methods PECO will choose will be consistent with best practices for the sort of information being sought. PECO's current assumption is that surveys will be used sparingly on subsets of customers to minimize the risk of influencing the behavior that the surveys are designed to measure. Some additional discussion of survey methods and issues is contained in Appendix D.

4.4 Reporting

PECO proposes to keep stakeholders and the Commission informed of its progress through periodic meetings and a final report. PECO will continue the stakeholder update and feedback sessions on a mutually beneficial and agreed upon schedule to report progress and provide any important customer feedback. PECO's final report for the Commission will present pilot results for customer acceptance and demand response based on the offerings made. The final report will also summarize all key findings on customer acceptance and demand response from the entire project, along with additional

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[9] For an example of this type of analysis related to dynamic rates for residential customers, see Stephen S. George, Josh Bode, Mike Perry and Andrew Goett. *2009 Load Impact Evaluation for Pacific Gas and Electric Company's Residential SmartRate™—Peak Day Pricing and TOU Tariffs and SmartAC Program—Volume 2: Ex Ante Load Impacts*. Freeman, Sullivan & Co., 2009.

areas for further study, if any. Consistent with Act 129, the report will discuss "the efficacy of the programs in affecting energy demand and consumption and the effect on the wholesale market prices." The final report will provide insight concerning why certain offerings were more effective than others. Finally, the report will present PECO's *recommended combinations of rates, technologies, promotional strategies and customer* education efforts to be offered to remaining customers who will receive smart meters.

5 BUDGET AND COST RECOVERY PLAN

***Note: PECO has received a one year extension on its Smart Grid Investment Grant* from the DOE so the budget has been extended into April of 2014. Also, the revisions to the plan have resulted in a reduction in the total estimated cost from $11.6M to $7.4M.**

In PECO's Smart Meter Plan the initial budget for customer acceptance programs was estimated to be $13 million. PECO's current estimate based upon its revised plan to target up to 140,000 customers is $7.4 million. Table 5-1 provides an overview of the proposed budget for dynamic pricing programs for 2010 through 2014.

The budget is comprised of the following major categories:

- Plan Preparation and Filing – costs include consultant support for plan preparation, testimony and ongoing regulatory support;
- Plan Development and Design – costs include consultants/contractors to help refine the plan following approval and provide expertise developing Request for Proposals for sourcing equipment and plan implementation;
- Plan Execution – costs include turnkey plan including technology (IHDs, PCTs, etc.), incentives and other marketing promotions, communications, call center for enrollment and maintenance, and development of web applications supporting programs, plus cost associated with engaging an EGS to provide commodity and associated administrative support;
- Technology – costs include in home technology and enabling technology (IHDs, PCTs, and DRMS);
- Measurement and Evaluation – costs include evaluating the effectiveness of programs including load impact analysis, enrollment analysis, customer surveys and preparing reports; and
- PECO Oversight – costs include the incremental labor or contractor support to provide overall project management.

PECO has spend approximately $630,000 comprised of actual costs through December of 2011. Dynamic pricing costs will be eligible for the DOE stimulus grant, further reducing costs to ratepayers by approximately 48%, as shown in Table 5-1. The effect of the stimulus grant is to reduce the 2010 costs to be recovered from customers from $511,000 to approximately $338,000 and the overall program costs to be recovered from customers from $7.4 million to $3.9 million. The dynamic pricing budget is preliminary and will be further refined after the programs are approved and designed.

PECO will recover the costs of the proposed Dynamic pricing programs through its Generation Supply Adjustment (GSA) Mechanism. The dynamic pricing program costs, net of the stimulus grant, will be included as administrative costs in the appropriate GSA cost recovery mechanism for Procurement Class 1, 2 and 3. Procurement Class 4 (customers with registered demands >500kW), will not be assigned any costs; customers *in this class are not eligible to participate in dynamic pricing programs. Common costs will* be allocated to the appropriate GSA mechanism based on the proportion of the associated procurement class and projected GSA sales to the total projected GSA sales for Procurement Class 1, 2 and 3. To the extent that certain costs are readily identifiable to a particular class, those costs will be directly assigned.

Table 5-1
Overview of the Proposed Budget for 2010 through 2014

Category	2010 O&M	2010 Capital	2010 Total	2011 O&M	2011 Capital	2011 Total	2012 O&M	2012 Capital	2012 Total	2013 O&M	2013 Capital	2013 Total	2014 O&M	2014 Capital	2014 Total	Total O&M	Total Capital	Total Total
Plan Preparation & Filing	$ 425	$ -	$ 425	$ 24	$ -	$ 24	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 449	$ -	$ 449
Plan Development & Design	-	-	-	47	-	47	35	-	35	-	-	-	-	-	-	$ 82	-	82
Plan Execution (EGS, Implementation Vendor, Communications)	-	-	-	-	-	-	2,217	-	2,217	1,362	-	1,362	214	-	214	$ 3,793	-	3,793
Technology (*IHD, PCT, DRMS*)	-	-	-	-	-	-	*650*	-	*650*	-	-	-	-	-	-	$ *650*	-	*650*
Measurement & Evaluation	-	-	-	-	-	-	175	-	175	120	-	120	455	-	455	$ 750	-	750
PECO Oversight (PM)	-	-	-	134	-	134	616	-	616	659	-	659	219	-	219	$ 1,628	-	1,628
Total Program Costs	$ 425	$ -	$ 425	$ 205	$ 1	$ 205	$ 3,693	$ 1	$ 3,693	$ 2,141	$ 1	$ 2,141	$ 888	$ 1	$ 888	$ 7,352	$ -	$ 7,352
Estimated Stimulus Grant Funding *	$ (201)	$ -	$ (201)	$ (97)	$ -	$ (97)	$ (1,743)	$ -	$ (1,743)	$ (1,011)	$ -	$ (1,011)	$ (419)	$ -	$ (419)	$ (3,471)	$ -	$ (3,471)
Total, Net PECO Program Costs	$ 224	$ -	$ 224	$ 108	$ 1	$ 108	$ 1,950	$ 1	$ 1,950	$ 1,130	$ 1	$ 1,130	$ 469	$ 1	$ 469	$ 3,881	$ -	$ 3,881

* Note: Reflects DOE Stimulus Grant funding assumed at approximately 48% of total.

APPENDIX A SUPPLEMENTAL INFORMATION ON TARIFF SELECTION

As in section 2.1 Appendix A is provided for reference only. This appendix contains supplemental information to support the rate selection and customer impact analysis.

Figure A-1 is an illustration of the PTR Rate for the residential class during the summer months, when there is a rebate during critical hours. Figure A-2 shows the PTR rate in the winter, during which it is no different than the existing rate.

Figure A-1:
PTR Rate During Summer Months

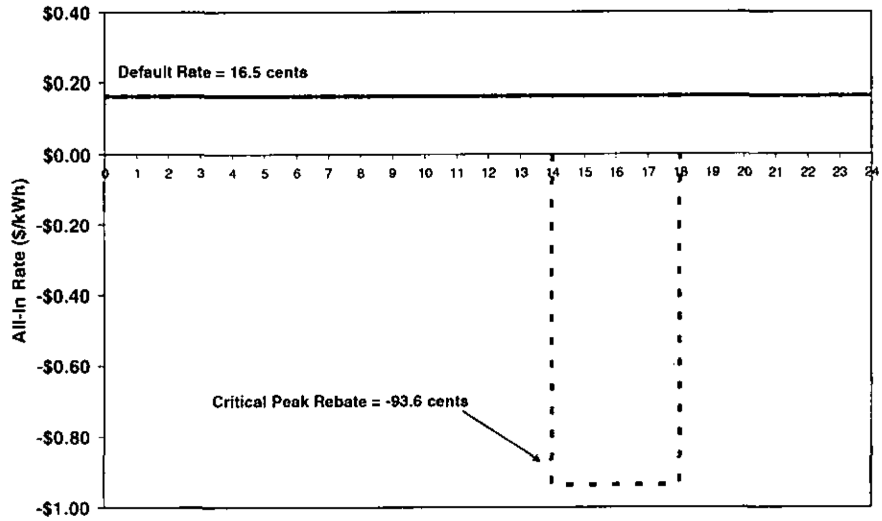


Figure A-2:
PTR Rate During Winter Months

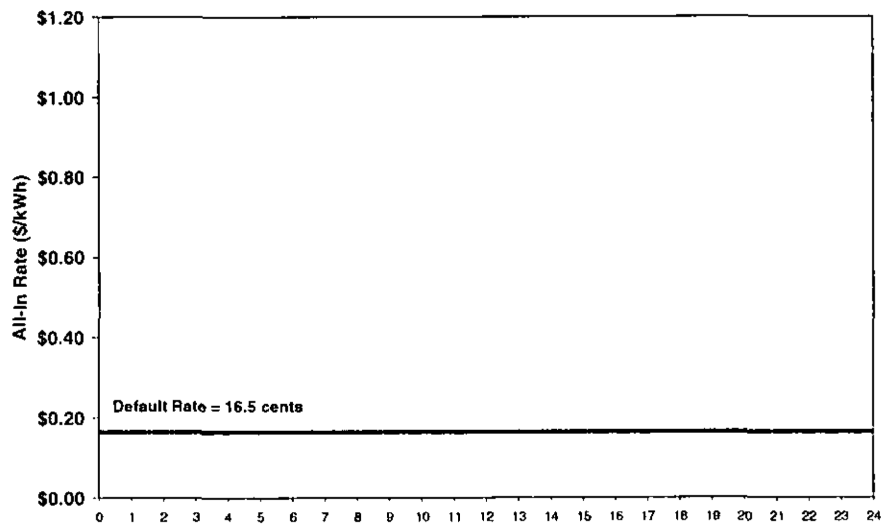


Figure A-3 is an illustration of the RTP rate on a typical critical day during the summer.

Figure A-3:
RTP Rate During Summer Event Day

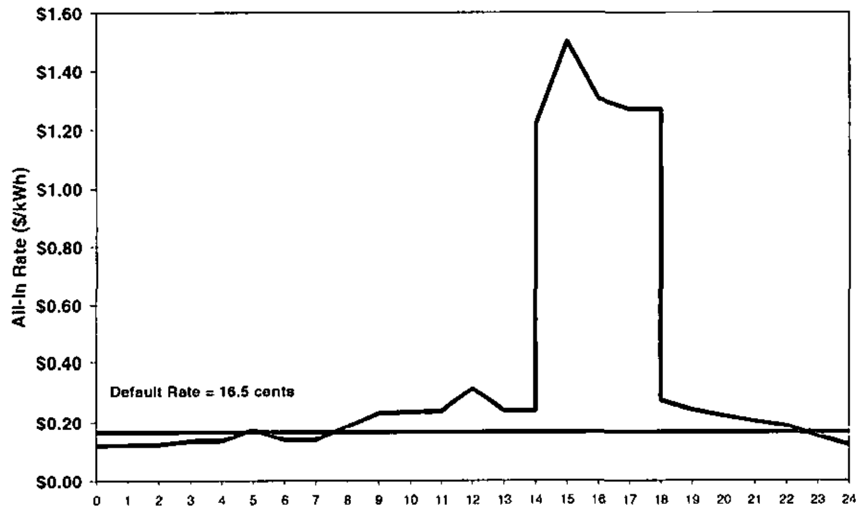


Table A-1 lists the actions that residential and business customers have taken in response to the peak rates during the California Statewide Pricing Pilot.

Table A-1:
Actions Taken in Response to Peak Rates in California Statewide Pricing Pilot

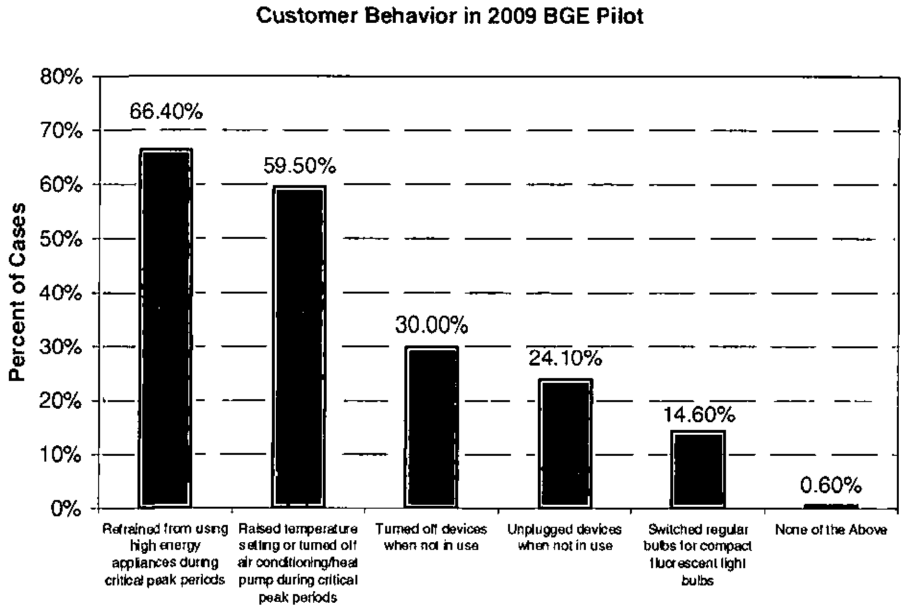
Residential
Shift laundry
Use appliances less
Turn off lights
Turn AC off/use less
Shift dishwasher use
Reduce laundry water temperature
Shift pool/spa pump/filter use
Improvements to home EE
Turn up AC temperature
Turn off appliances
Turn off tv/computer
Do not use stove/oven
Leave house
Shift cooking time
Reduce fan usage
Line dry clothes
Use "Heat off" setting on dishwasher

Business
Turn lights/equip off when not needed
Turn AC off more
Raise thermostat setting on AC
Replace lights/fixtures with more efficient
Install programmable thermostat
Change hours of operation
Remove lights/reduced wattage
Install lights/equipment timers
Make improvements to facility EE
Shift employee work schedule
Chang hours of operation
Replace old equipment

Source: Compiled from several reports on end-of-pilot surveys conducted during the California Statewide Pricing Pilot.

Figure A-4 displays the percent of customers that took a particular action in response to dynamic rates during the 2009 Baltimore Gas & Electric pilot.

Figure A-4:
Customer Behavior in 2009 BGE Pilot[10]



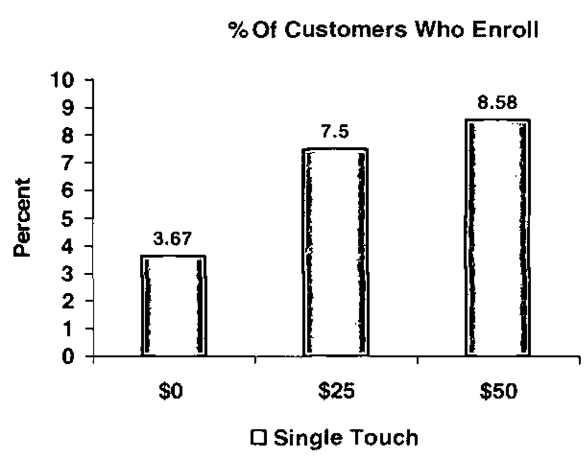
[10] Source: *2009 Smart Energy Pricing (SEP) Post Pilot Program Residential, Customer Experience Comparison Report*. Maryland Marketing Source

APPENDIX B SUPPLEMENTAL INFORMATIOIN ON THE RELATIVE EFFECTIVENESS OF ALTERNATIVE PROMOTIONAL FEATURES

This appendix summarizes analyses performed by FSC for PG&E based on marketing of the Company's SmartRate tariff. SmartRate is a CPP tariff similar to what PECO is planning to offer. PG&E tested different promotional strategies and FSC combined data from these choice experiments with information on customer characteristics to estimate a choice model similar to what is mentioned in Section 4.2 of this Plan. Some highlights of this work are contained below. The detailed documentation can be found in: Stephen S. George, Josh Bode, Mike Perry and Andrew Goett. *2009 Load Impact Evaluation for Pacific Gas and Electric Company's Residential SmartRate™—Peak Day Pricing and TOU Tariffs and SmartAC Program—Volume 2: Ex Ante Load Impacts*, Freeman, Sullivan & Co., 2009.

One key finding from the SmartRate analysis concerns the impact of sign-up incentives on enrollment. Figure B-1 illustrates how a modest sign-up incentive of $25 doubled enrollment rates compared with no incentive but increasing the incentive to $50 had only a modest incremental effect.[11] Direct mail solicitation was used to market SmartRate.

Figure B-1:
The Impact of a Sign-up Incentive on CPP Enrollment
PG&E SmartRate Tariff



KEY ASSUMPTIONS

No Enabling Technology

30% CARE

50% Central A/C

Incentive Offered on All Three Touches

1st Touch Pre-summer
2nd Touch Early Summer
3rd Touch Late Summer

#10 Letter With Business Reply Envelope

Multilingual Letter

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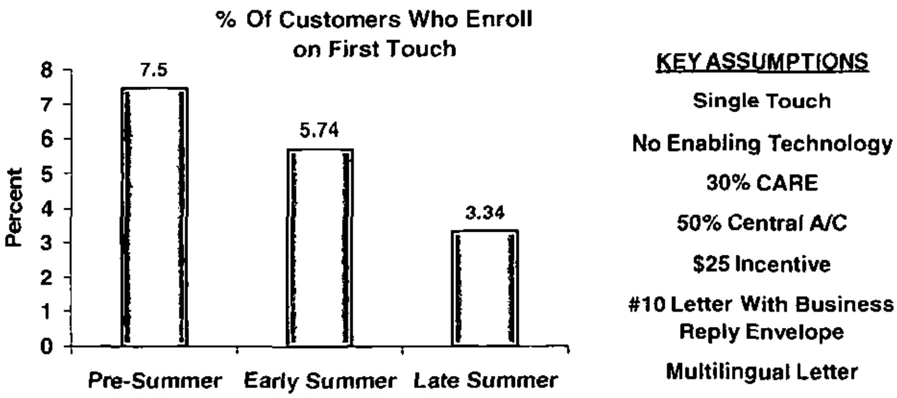
[11] When considering the information provided in Figure B-1 and the other figures in this Appendix, it is important to note the key assumptions listed alongside the figures. If some of these assumptions change, the enrollment rates and the difference in enrollment across the various treatments depicted in each figure could change. For example, if the saturation of air conditioning were lower than the 50% assumed here, the enrollment rates would be higher and vice versa. Note that in this and other figures, CARE stands for California Alternate Rates for Energy. It is a program through which low income consumers receive lower electricity rates. It is similar to PECO's CAP tariff.

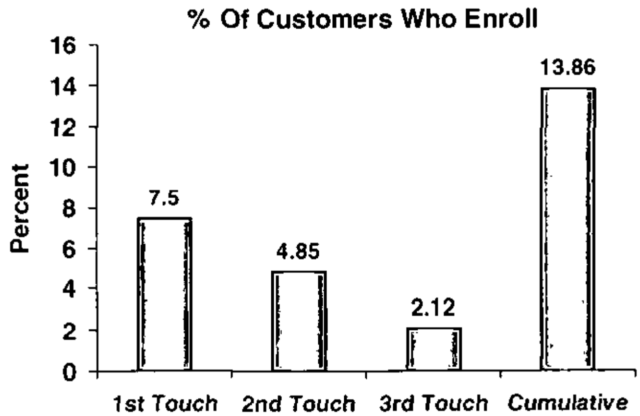
Another interesting finding from the analysis of PG&E's SmartRate is the impact of seasonality. Figure B-2 shows the average enrollment rate for offers that are made in pre-summer, early summer and late summer. Enrollment when the rate was marketed prior to the summer was more than twice as large as when the rate was marketed in late summer.

Figure B-2:
Impact of Timing of Promotional Campaign on CPP Enrollment
PG&E SmartRate Tariff



The incremental effect of multiple solicitations for the PG&E CPP rate is shown in Figure B-3. As is typical with direct mail solicitation, the enrollment rate with second and third mailings to the same customer is about half the rate of the prior mailing.

Figure B-3:
Impact of Multiple Direct Mail Solicitations ("touches") on CPP Enrollment
PG&E SmartRate Tariff



KEY ASSUMPTIONS

1st Touch Pre-Summer
2nd Touch Mid-Summer
3rd Touch Late Summer

No Enabling Technology

30% CARE

50% Central A/C

$25 Incentive on Each Touch

#10 Letter With Business Reply Envelope

Multilingual Letter

One of the more significant findings from analysis of PG&E's SmartRate marketing campaigns was the dramatic difference in enrollment rates when SmartRate was offered to customers that had previously enrolled in PG&E's direct load control program, known as SmartAC. *Customers who agree to participate in the SmartAC program are paid a* one-time incentive of $25 for allowing PG&E to cycle their air conditioner under relatively rare emergency conditions. There is no additional annual payment associated with participation. PG&E currently has about 135,000 control devices installed through this program, mostly on residential air conditioners. Customer surveys indicate that the motivation for signing up has more to do with "helping to keep the lights on" and avoiding the need for new power plants than for any monetary benefit associated with the modest incentive payment. For customers who have already enrolled in SmartAC, SmartRate gives them an opportunity to reduce their energy bill and to use the control device to aid in that process. As seen in Figure B-4, this monetary motivation, and the convenience of the enabling technology in helping to automate demand response, dramatically increased the SmartRate enrollment rate compared with customers that were not enrolled in SmartAC.[12]

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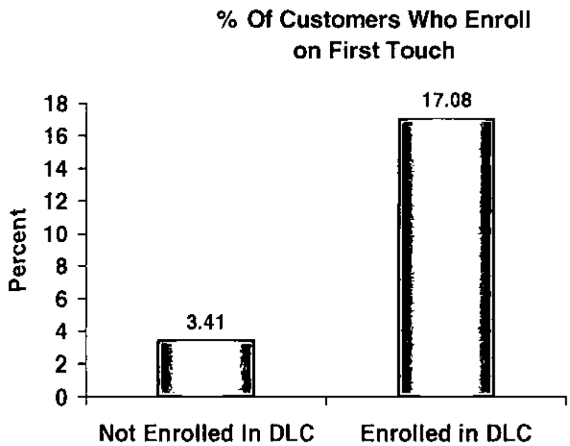
[12] It should be noted that a key assumption underlying these results differs from that in the other figures in this section. SmartAC participants all have central air conditioning, so it is not appropriate to compare the enrollment rate for households in the SmartAC program with the enrollment rate for the general population, since not everyone in the general population has central air conditioning and, as indicated later in this section, the presence of central air conditioning has a significant and negative impact on enrollment rates for CPP tariffs. In the PG&E analysis, information on air conditioning ownership was not available, but a "propensity of ownership" variable was created for all customers. In Figure B-4, the average propensity score for SmartAC households was 73%, which is much higher than the 50% average underlying the enrollment estimates in the other figures. That is why

Figure B-4:
Impact of Enabling Technology on CPP Enrollment
PG&E SmartRate Tariff



KEY ASSUMPTIONS

Single Touch

Pre-Summer Marketing

25% CARE

73% Likelihood of Owning Central A/C

$25 Incentive

#10 Letter With Business Reply Envelope

Multilingual Letter

Figures B-5 and B-6 show the rather modest impact on enrollment of different messages or different formats for the promotional material that is provided. Figure B-5 shows that a promotional campaign based on a standard letter with a business reply envelope is more effective than one that is based on a three-fold, glossy brochure, although the difference is modest. Figure B-6 shows the even smaller difference in enrollment between a strategy based on a single message about bill savings and messages that emphasize both the environment and bill savings or "saving money for your family."

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the enrollment rate of 3.4% for households that were not in the SmartAC program is less than the 7.5% rate shown in Figure B-1 for customers with 50% air conditioning saturation and a $25 sign-up incentive.

Figure B-5:
Impact of Promotional Material Format on CPP Enrollment PG&E SmartRate Tariff

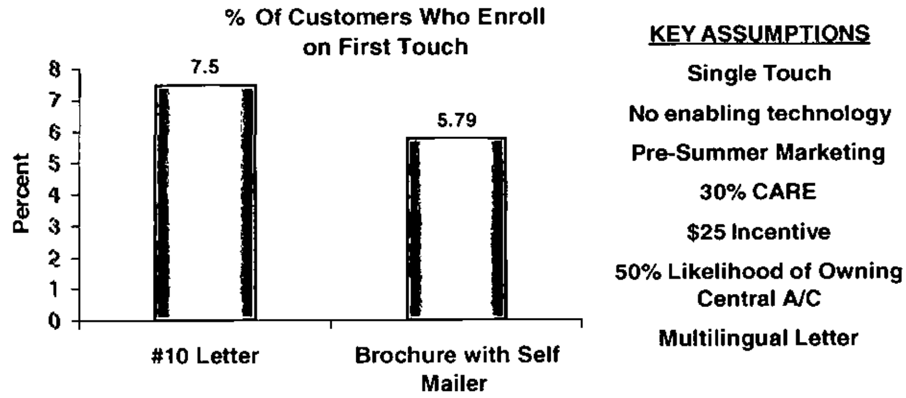


Figure B-6:
Impact of Promotional Message on CPP Enrollment
PG&E *SmartRate Tariff*

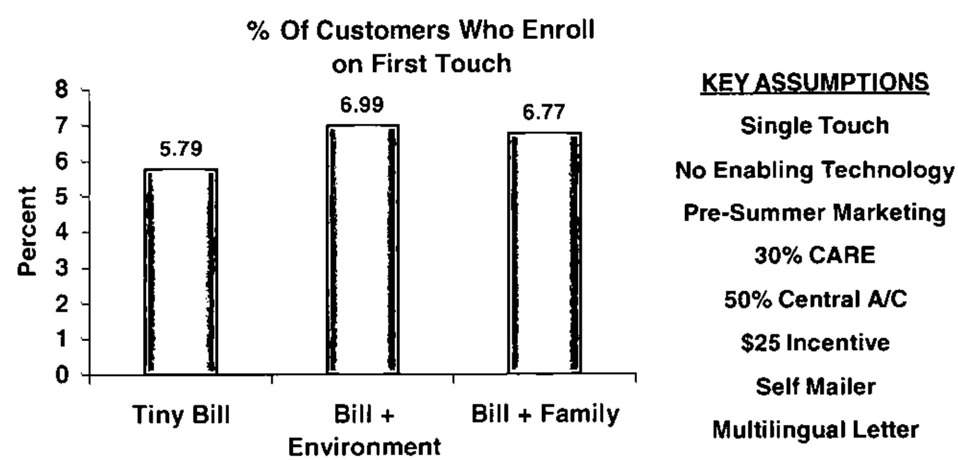


Figure B-7 shows the significant, and negative, impact that central air conditioning ownership has on enrollment in dynamic pricing programs. Not surprisingly, customers that have central air conditioning are less interested in paying higher prices at times when they are most likely to be using their air conditioner. These customers also are more likely to be structural losers than structural winners if they go on a CPP or TOU tariff, since a higher than average percent of their overall electricity use will occur during the peak period when prices are high. On the other hand, a wide variety of research indicates that customers with central air conditioning are more likely to respond and provide greater load relief during high priced periods than customers without air conditioning. That is, the customers that are most difficult to enroll in a dynamic pricing plan are the same customers that will provide the greatest demand response. As indicated in Figure B-7, households with a greater than 75% likelihood of owning central air conditioning have more than a 50% lower probability of enrolling in a CPP rate than do households with less than a 25% likelihood of owning a central air conditioner. This enrollment differential could be even greater in PECO's service territory given the even higher value that customers place on air conditioning in more humid climates like Philadelphia than they do in drier climates like California.

Figure B-7:
Impact of the Likelihood of Central Air Conditioning Ownership on Enrollment in CPP PG&E *SmartRate Critical Peak Pricing Tariff*

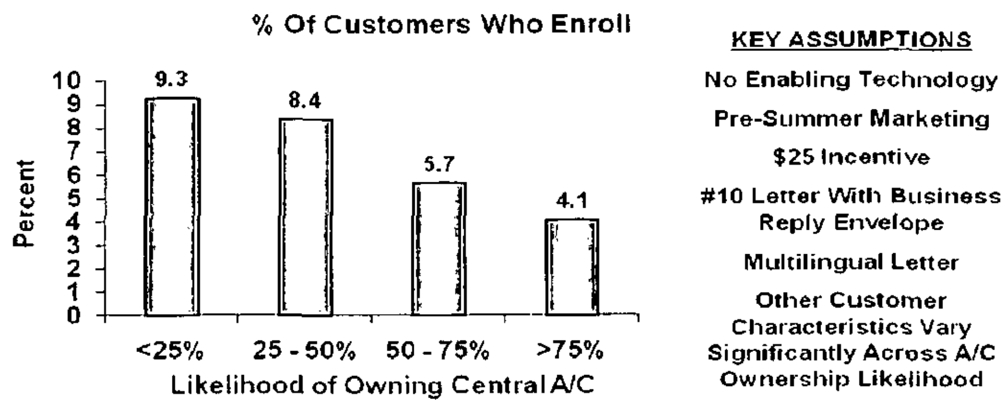
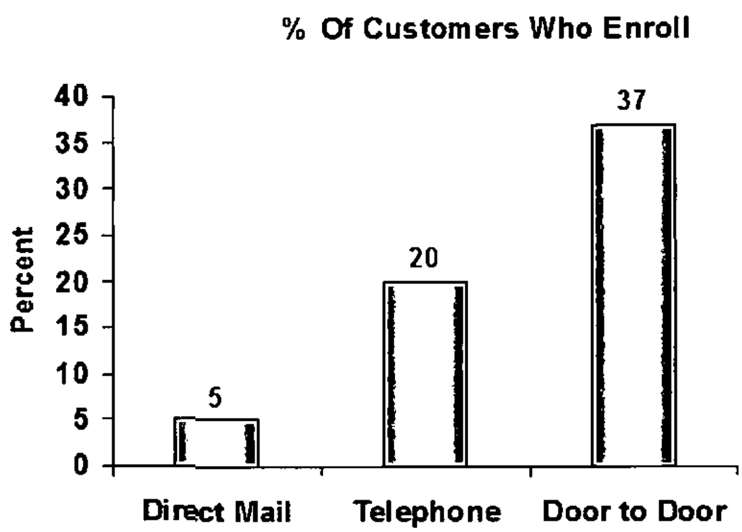


Figure B-8 shows the potential impact of different marketing modes on enrollment. The results depicted there are not for a dynamic rate program but, rather, are for PG&E's SmartAC program. Nevertheless, it is reasonable to think that similar differences across modes might exist when marketing dynamic rates, as the primary difference between direct mail and the other two modes is the ability to interact with customers in real time, answering questions they might have and minimizing additional transaction costs associated with enrollment when solicited through direct mail (e.g., mailing in a response card, picking up the phone and calling, etc.). The results shown in the figure were not based on a scientific comparison of marketing modes (as will be done in the promotional strategies track that PECO will implement). Rather, they were based on a project in which it was essential to recruit more customers in specific locations in a short period of time than was possible through direct mail. Importantly, the customers who were contacted via telephone and in person already had been contacted through direct mail and had not signed up to participate. A side-by-side test of marketing modes among customers that never had been contacted previously could produce even bigger differences.

Of course, a significant downside to telephone and door-to-door solicitation with residential customers is that it is either impossible (in the case of telephone recruitment) or very expensive (in the case of door-to-door solicitation) to contact a random sample of customers. With telephone solicitation, a large portion of households have caller ID and refuse to pick up calls from 800 numbers or numbers from unknown callers, and this reluctance is not random. With door-to-door solicitation, recruitment is much more cost effective if solicitors can go to every household in a neighborhood than if they must go to randomly selected households that will be much further apart, even with the most efficient route. These shortcomings are not of much concern if the only goal is maximizing enrollment. However, when a project requires that solicitation be random and representative of the broader population for most test cells, as is the case here, these alternative modes are not appropriate.

Figure B-8
Impact of Marketing Mode on Enrollment in a Direct Load Control Program
PG&E SmartAC Program



This is for SmartAC, not SmartRate

Not a controlled test but indicative—was for customers located on selected feeders in high air conditioning regions

20% represents percent enrolled who were spoken to (not all customers could be reached)

37% represents percent of those spoken to—most people answered the door

APPENDIX C SUPPLEMENTAL INFORMATION ON TECHNOLOGY OPTIONS

This appendix provides additional background on technologies. Utilities and regulators often are interested in the effects of three main types of technology that may increase demand response impacts or reduce overall energy use: notification technology, load control technology, and information feedback technology.

Notification technologies allow a utility to inform customers when dynamic prices are in effect. Notification methods include:

- General communication channels such as email, phone calls, and text messages;
- Dual-purpose technologies such as programmable communicating thermostats (PCTs) and in-home information display devices (IHDs), which can provide notification in addition to their main functionality (e.g., load control, information feedback); and
- Although not recommended for PECO's Plan specialized devices such as an Energy Orb (e.g., a device that can be placed in homes or businesses that glow a different color depending on the current price of electricity) that have notification as their sole function.[13]

Recent work by FSC illustrates the value of ensuring that customers are aware of dynamic pricing events by using multiple notification methods. Results from a recent load impact evaluation of PG&E's SmartRate tariff found that consumers with four different notification options produced average load impacts that were almost four times greater than consumers that were reached through a single-notification channel.[14]

A second category of technologies that can be used to enhance price-driven demand response are devices used to control end-use equipment such as central air conditioners ("CAC"). The most widely used control options are PCTs and load control switches for CAC's. PCTs adjust the thermostat setting a few degrees when a signal is received and control switches prevent the air conditioning compressor from operating a certain percentage of each hour based on a predetermined cycling strategy. When used in conjunction with dynamic pricing, the temperature adjustment or cycling operation automates demand response associated with air conditioning during the peak period on critical peak days.

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[13] PECO does not believe that single function devices will be the preferred mode of notification after the rollout of a smart grid capable of communicating via existing multi-function devices; this discussion is provided as background.

[14] See Stephen George, Josh Bode, Mike Perry and Zach Mayer. *2009 Load Impact Evaluation for Pacific Gas and Electric Company's Residential SmartRate—Peak Day Pricing and TOU Tariffs and SmartAC Program, Volume 1: Ex-post Load Impact.* Freeman, Sullivan & Co. 2009.

A variety of pricing pilots[15] have shown that air conditioning control technologies increase the demand response associated with dynamic pricing by 50% to 100%, although quite *often reported differences are misleading as households with control devices all have air* conditioners whereas some households without control devices don't have air conditioners.[16] Although technology can be used to control end uses other than air conditioners (e.g., water heating, pool pumps, etc.), the greatest demand response potential in PECO's service territory is associated with central air conditioning. The saturation of central air conditioning in the PECO service territory is approximately 60%.

Turning to SMC customers, a key finding from California's Statewide Pricing Pilot[17] ("SPP") was that small non-residential customers did not provide any load reduction in response to dynamic tariffs in the absence of enabling technology. This study also found that the incremental effect of enabling technology on medium business customer's load impacts was significant. Another useful insight from the California SPP was that, even when offered for free, many SMC customers did not accept a PCT. In fact, for customers with peak demands below 20 kW, only one third took a free PCT. For medium customers, roughly 60% agreed to have a PCT installed for free.

The third primary technology option that may be useful for reducing energy use either as a complement to dynamic pricing or as a standalone treatment involves devices that provide frequent or near real-time information feedback to consumers. A wide variety of research going back several decades suggests that the provision of information on energy use and costs more frequently than the standard monthly bill can improve energy usage decisions and lead to reductions in energy use.[18] One theory of why such changes might be observed is that more frequent feedback helps consumers see the relationship between their usage decisions and the cost of those decisions. With real time feedback devices in a home, for example, consumers can see what happens to the rate of expenditure on energy when their air conditioner turns on during a hot day, or when they turn on their electric drier. Another theory is that consumers can use such devices to understand the relative contribution of various end uses to their overall energy bill. Research indicates

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[15] For a summary of the results from many past pricing pilots, see Ahmad Faruqui and Sanem Sergici. *The Power of Experimentation: New Evidence on Residential Demand Response*, The Brattle Group, 2008.

[16] Since studies show that households with air conditioners tend to provide greater demand response than those without air conditioners, some of the reported differences might result from this apples-to-oranges comparison.

[17] Stephen S. George, Ahmad Faruqui and John Winfield. *California's Statewide Pricing Pilot: Commercial & Industrial Analysis Update*. CRA International. June 28, 2006.

[18] Darby S (2006) *The Effectiveness of Feedback on Energy Consumption. A Review for DEFRA of the Literature on Metering, Billing and Direct Displays*. Environmental Change Institute, University of Oxford

http://www.defra.gov.uk/environment/climatechange/uk/energy/research/pdf/energyconsump-feedback.pdf and http://www.defra.gov.uk/environment/climatechange/uk/energy/research/pdf/energyconsump-feedbackappendix.pdf that customers often have misperceptions concerning which end uses use the most electricity in their homes and businesses, and make adjustments to energy use based on these misperceptions that don't lead to significant reductions in energy use. Information feedback devices can also be used by consumers to set energy budgets or goals and manage their energy use toward those goals. Behavioral research shows that information feedback combined with goal setting is often more effective in changing consumer behavior than feedback alone.

Near real-time information feedback on energy use and costs can be provided through dedicated IHDs that communicate directly with advanced meters, or through other methods that communicate with multi-use devices that consumers already own, such as personal computers and smart phones. Access to day-late usage data can be provided to consumers with personal computers through web portals, and other types of information feedback, such as bill alerts, can be delivered through a variety of existing or new channels (e.g., phone, emails, text messages, messaging to IHDs, etc.).

While there is a growing number of studies underway focused on understanding the impact of information feedback on overall energy use, relatively few have examined the impact of information feedback on demand response.[19]

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[19] Faruqui, Ahmad, Sanem Sergici, and Ahmed Sharif (2010), "The Impact of Informational Feedback on Energy Consumption - A Survey of The Experimental Evidence," *Energy 35 (2010)*, 1598-1608

APPENDIX D SUPPLEMENTAL INFORMATION ON SURVEYS

Surveys can be used to obtain basic information about customer characteristics for use in choice modeling or for determining differences in load impacts tied to customer characteristics. However, there are significant shortcomings with trying to collect and use such data, including non-response bias, loss of sample due to non-response, inability to extrapolate to specific customers for targeting purposes (because information doesn't exist for the target population), and others. While survey information is often essential to evaluation, understanding the limitations of survey data is also important.

Surveys can be used to measure behavior change resulting from exposure to time-varying pricing and information feedback. The simplest, but least accurate, approach to survey design for this purpose is a single treatment period or post-treatment survey that asks customers to report changes they have made in their behavior in the recent past. The accuracy of information obtained in this manner is low for two reasons. First, respondents may be unable to accurately recall changes they made that occurred more than a few days prior to the survey interview and may not be aware of changes that were made by other parties in the household. Second, respondents may overstate the changes they have made if they believe such changes are socially desirable or if they think that is the answer the surveyor would like to hear.

A more accurate and reliable approach to determining behavioral change through consumer surveys is to conduct two surveys of both treatment and control customers, one before and the other after the treatment goes into effect. These surveys would be designed to measure behavior in the recent past, say within the last week or month, and would focus on easily answered questions about household energy use behaviors. Examples of such questions are, "What is the set point on your thermostat right now?"; "About how many of the rooms in your home that are not currently occupied by people have the lights on right now?"; "Are there any entertainment centers running in rooms in your home right now that are not occupied by anyone?" Of course, it is also possible to pose questions about electricity consumption behavior that refer to prior time periods and also to ask questions about the occupant's perceptions and opinions about energy use in such surveys.

Surveying only treatment group customers can determine whether changes occurred between the pretreatment and treatment periods for that group, but not whether the changes were caused by the treatment. Other factors could lead to such changes (e.g., headlines about climate change, general information campaigns about the importance of conserving energy, the purchase of a programmable thermostat by a consumer who did not previously have one, changes in economic conditions, etc.). In order to establish causality, it is necessary to obtain the same information on treatment and control customers.

In addition, surveys can be used to determine the extent to which respondents understand the nuances of the tariffs they have selected, or whether they have increased their knowledge regarding energy matters (from the information feedback provided by an IHD, for example). Questions could be asked about the start and stop times for peak periods, and approximately what the price ratios are between peak and off-peak periods. Such information could be used in regression analysis to see if the depth of understanding of key features of the tariff correlates with demand response (e.g., whether customers with a high degree of understanding produce larger load impacts than those that have less understanding of these key features).

When developing a survey strategy for assessing changes in behavior, it is very important to keep in mind that that surveys can generate artificial effects if used frequently and indiscriminately. Frequent surveys about the treatment that is of interest can cause people to take actions that they wouldn't otherwise take in the absence of the surveys. Surveys can also generate misleading information in that respondents have a tendency to tell you what they think you want to hear, which often overstates actions that are actually taken.

Exhibit B

PECO
An Exelon Company

Supplement to PECO Energy Company's Initial Dynamic Pricing and Customer Acceptance Plan
The modifications described below are a result of PECO's attempt to conform to the PA PUC RMI

Aspects of the Plan that are Changing		
Description of area impacted	**Original Plan**	**Supplement/Modification**
Commodity supply	PECO to provide commodity within its default purchase	EGS to provide commodity based on competitive bid
Bill calculation	PECO to perform calculations and include charges on the bill	EGS to perform the bill calculations and send the charges to PECO to include on the bill – this utilizes the existing process for EGS commodity charges
Approach to the market	Test & Learn and then revise and improve messages, etc. utilizing an estimated 28 test cells to achieve a statistically valid result for both enrollment and performance	Utilize focus groups to refine the marketing message, communication channels, educational messages, etc. and test among a group of 8 test cells to achieve a statistically valid result for both enrollment and performance
Price structure	Two price structures were approved: Critical Peak Price (CPP) and Time of Use (TOU)	Through stakeholder input (including EGSs) it was determined that a single price structure (TOU) would be most cost effective when considering a one year pilot
Pilot length	Two (2)+ year study commencing in the fall of 2012 and concluding at the end of 2014	One (1) year study (1/13 – 12/13), followed by analysis and reporting (4/14); attempting to complete a simpler pilot within PECO's DOE reimbursement window
Proposed cost	Current budget is $11.6M	Proposed budget is $7.4M
Customer notifications	Customers on the CPP rate would be notified via SMS text, phone, email when an event (critical peak day) was going to occur	Notifications are not needed with a TOU rate structure

<table>
<tr><th colspan="2">Settlement Agreement Terms that are Changing</th></tr>
<tr><th>Original Plan</th><th>Supplement/ Modification</th></tr>
<tr><td>A. PJM's Proposed New Demand Response Products PECO will monitor PJM's request to the Federal Energy Regulatory Commission, filed on December 2, 2010 at Docket No. ER11-2288-000, for approval of two new demand response products. If PECO's peak periods are impacted in 2014 or beyond, appropriate adjustments will be made to the Plan's Critical Peak Pricing ("CPP") and Time-Of-Use ("TOU") rates in consultation with stakeholders.</td><td>PECO will continue to follow PJM DR activities but PECO is not supplying the commodity.</td></tr>
<tr><td>C. Additional TOU Cells
PECO will add five additional TOU test cells to the Plan, as follows:
A. For Rate R Offer
1. TOU without incentive in the Spring of 2013;
2. TOU with incentive but without first year bill protection in the Fall of 2012;
3. TOU with incentive plus alternate message in the Spring of 2013; and
4. TOU with enhanced education in the Spring of 2013.
B. For Rate RH Offer
5. TOU with incentive in the Spring of 2013.</td><td>The revised pilot plan only utilizes a TOU rate, there will be no CPP rate, therefore there is no need to balance the test cells based on rate offered</td></tr>
<tr><td>F. Methodology Provided in CPP and TOU Riders
In each CPP and TOU rider, PECO will include a formula that sets forth how the rate is to be calculated. See Exhibit 1.</td><td>There is no need for a tariff sheet since commodity will be supplied by an EGS.</td></tr>
<tr><td>G. Sourcing Generation Supply and Rate Design
1. From Plan inception through the end of PECO's currently approved default service plan on May 31, 2013
The Company will utilize the methodology described in Appendix A to PECO Energy Company Statement No. 3 (the Direct Testimony of Dr. Ahmad Faruqui) to calculate the CPP and TOU rates. See Exhibit 2 (a copy of Appendix A).
The Company will not perform any reconciliation of revenues collected with respect to changes in load or shifted demand for pilot program participants. PECO agrees to forego recovery of any revenue collection shortfall associated with the pilot program participants. PECO will reflect changes in usage patterns with respect to its dynamic pricing programs in its future rate proceedings.

2. For the default service plan period that will begin on June 1, 2013
PECO will address the issues of sourcing and pricing generation supply for dynamic pricing service, the need for a separate Generation Supply Adjustment and a reconciliation mechanism for price differences between forward and actual market prices as part of its next default service plan filing.</td><td>No longer necessary since commodity will be supplied by an EGS</td></tr>
</table>

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PECO ENERGY COMPANY FOR APPROVAL OF ITS SMART METER TECHNOLOGY PROCUREMENT AND INSTALLATION PLAN	:	DOCKET NO. M-2009-2123944
PETITION OF PECO ENERGY COMPANY FOR EXPEDITED APPROVAL OF ITS DYNAMIC PRICING PLAN VENDOR SELECTION AND DYNAMIC PRICING PLAN SUPPLEMENT	:	

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SECRETARY'S BUREAU

CERTIFICATE OF SERVICE

I hereby certify that I have this date served true and correct copies of PECO Energy Company's Petition for Expedited Approval of its Dynamic Pricing Plan Vendor Selection and Dynamic Pricing Plan Supplement upon the individuals listed below, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant):

VIA FIRST CLASS AND ELECTRONIC MAIL

Thomas P. Gadsden
Anthony C. DeCusatis
Catherine G. Vasudevan
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, PA 19103-2921
tgadsden@morganlewis.com
adecusatis@morganlewis.com
cvasudevan@morganlewis.com

Counsel for PECO Energy Company

Richard A. Kanaskie
Senior Prosecutor
Bureau of Investigation and Enforcement
P.O. Box 3265
Harrisburg, PA 17105
rkanaskie@pa.gov

Tanya J. McCloskey
Senior Assistant Consumer Advocate
Jennedy S. Johnson
Assistant Consumer Advocate
Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923
tmccloskey@paoca.org
jjohnson@paoca.org

Sharon E. Webb
Assistant Small Business Advocate
Office of Small Business Advocate
Suite 1102, Commerce Building
300 North Second Street
Harrisburg, PA 17101
swebb@state.pa.us

Daniel Clearfield
Deanne M. O'Dell
Eckert Seamans Cherin & Mellott, LLC
213 Market Street, 8th Floor
Harrisburg, PA 17108-1248
dclearfield@eckertseamans.com
dodell@eckertseamans.com

Counsel for the Retail Energy Supply Association, Direct Energy Services, LLC and Direct Energy Business, LLC

Charis Mincavage
McNees Wallace & Nurick LLC
100 Pine Street
P.O. Box 1166
Harrisburg, PA 17108-1166
cmincavage@mwn.com
abakare@mwn.com

Counsel for the Philadelphia Area Industrial Energy Users Group

Anthony E. Gay, Esquire
Associate General Counsel
PECO Energy Company
2301 Market Street, P.O. Box 8699
Philadelphia, PA 19101-8699
215.841.4635

Counsel for PECO Energy Company

Dated: April 2, 2012

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Anita Zakeia

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