

COMMONWEALTH OF PENNSYLVANIA



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December 4, 2009.

James J. McNulty
Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

RE: Petition of PPL Electric Utilities
Corporation for Approval of a Smart Meter
Technology Procurement and Installation Plan
Docket No. M-2009-2123945

Dear Secretary McNulty:

Enclosed for filing is the Main Brief of the Office of Consumer Advocate, in the above-referenced proceeding.

Copies have been served as indicated on the enclosed Certificate of Service.

Respectfully Submitted,

A handwritten signature in cursive script that reads "James A. Mullins".

James A. Mullins
Assistant Consumer Advocate
PA Attorney I.D. # 77066

Enclosures

cc: Honorable Wayne L. Weismandel

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities Corporation :
for Approval of a Smart Meter Technology : Docket No. M-2009-2123945
Procurement and Installation Plan :

MAIN BRIEF
OF THE
OFFICE OF CONSUMER ADVOCATE

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Dated: December 4, 2009

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I. INTRODUCTION

Act 129 (Act) was signed into law by Governor Rendell on October 15, 2008 and became effective on November 14, 2008. The Act provides for Energy Efficiency and Conservation Programs; Amending the Duties of Electric Distribution Companies' (EDCs) Obligation to Serve; Providing for Smart Meter Technology and Time of Use Rates; Providing Additional Market Power Remediation for Market Misconduct; Providing Additional Alternative Energy Sources; and Providing a Carbon Dioxide Sequestration Network. The Act makes a number of significant amendments to the Pennsylvania Public Utility Code, many of which will have a direct impact on the rates and service of customers of Pennsylvania's EDCs.

Of particular relevance here, Act 129 requires Electric Distribution Companies with at least 100,000 customers to present a Smart Meter Technology Procurement and Installation Plan (Plan) to the Pennsylvania Public Utility Commission (Commission) for approval. 66 Pa.C.S. § 2807(f). Each Plan must describe the smart meter technologies that the EDC plans to install upon customer request or in new building construction and in accordance with a depreciation schedule not to exceed fifteen (15) years. Id. Act 129 also requires that, with customer consent, the EDCs make available direct meter access and electronic access to customer meter data to third parties including electric generation suppliers (EGSs) and providers of conservation and load management services. Id. The Act further defines the requirements for acceptable smart meter technology. 66 Pa.C.S. § 2807(g). Finally, the Act established cost recovery alternatives. 66 Pa.C.S. § 2807(7).

On March 30, 2009, the Commission issued a Secretarial Letter seeking comments on a draft staff proposal and additional questions regarding EDC smart meter procurement and installation. Comments were due by April 15, 2009, with reply comments due

April 27, 2009. On April 9, 2009, the Commission, at the request of several interested parties, issued a Secretarial Letter extending the comment period to April 20, 2009 and the reply comment period to April 29, 2009. The OCA filed comments on April 20, 2009.

On June 24, 2009, the Commission entered an order detailing the standards and guidelines 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). In that Order, the Commission granted a network development and installation grace period of up to thirty (30) months following plan approval and clarified that the fifteen-year depreciation period for smart meters should commence upon plan approval (with the thirty month grace period to be treated as part of that timeframe). Id. at 7, 15. The Commission specifically removed support for service-limiting and prepaid service as a minimum capability requirement due to policy implications and determined to resolve these issues in another proceeding prior to requiring such capability in smart meters. Implementation Order at 18.

As to cost recovery, the Commission allowed each EDC to develop a reconcilable adjustment clause tariff mechanism in accordance with 66 Pa.C.S. § 1307. Implementation Order at 31. However, the Commission also stated that loss of decreased revenues by an EDC due to reduced electricity consumption or shifting energy demand cannot be considered a cost of the smart meter technology recoverable under a reconcilable automatic adjustment clause. Id. at 28. As to allocation of costs to customer classes, the Commission required that all measures associated with an EDC's smart metering plan be financed by the customer class that receives the benefits of such measures. Id. at 32.

In the Implementation Order, the Commission called for the publication of the Plans in the *Pennsylvania Bulletin* and allowed for the filing of Comments on the Plan by September 25, 2009. Implementation Order at 4. The Commission also directed that at least one technical conference be scheduled for each EDC which shall be transcribed with the transcript becoming part of the record. Id.

On August 14, 2009, PPL filed its “Petition of PPL Electric Utilities Corporation for Approval of a Smart Meter Technology Procurement and Installation Plan” (Smart Meter Plan or SMP). The Company’s filing was assigned to the Office of Administrative Law Judge and further assigned to Administrative Law Judge Wayne L. Weisman for investigation. On August 28, 2009, the Office of Consumer Advocate filed its Notice of Intervention and Public Statement in this matter. On September 25, 2009, the OCA filed its Comments in response to PPL’s SMP. On September 29, 2009, a prehearing conference was held in Harrisburg at which time a procedural schedule was established. Pursuant to this schedule, on October 6, 2009, a technical conference was convened in this proceeding. On October 9, 2009, the OCA filed the Direct Testimony of Thomas S. Catlin¹ and Christina R. Mudd² (both of Exeter Associates, Inc.) and, on October 30, 2009, the OCA filed the Surrebuttal Testimony of Mr. Catlin and Ms. Mudd

¹ Mr. Catlin is a principal with Exeter Associates, Inc. and has previously presented testimony on more than 250 occasions before the Federal Energy Regulatory Commission and the public utility commissions of more than 20 states, including Pennsylvania, and the District of Columbia. Mr. Catlin’s work at Exeter involves the analysis of the operations of public utilities, with particular emphasis on utility rate regulation. Mr. Catlin has also been extensively involved in the review and analysis of utility rate filings, as well as other types of proceedings before state and federal regulatory authorities. His work in utility rate filings has focused on revenue requirements issues, but has also addressed service cost and rate design matters. Mr. Catlin has also been involved in analyzing affiliate relations, alternative regulatory mechanisms, and regulatory restructuring issues.

² Ms. Mudd is a Senior Analyst with Exeter Associates, Inc. Ms. Mudd’s work at Exeter is primarily related to the analysis of state regulatory and legislative policies for the development of renewable resources, the expansion of energy efficiency and conservation, and the use of distributed resources. Ms. Mudd also has considerable experience with the analysis of climate change mitigation strategies, including the evaluation of various benefits-costs assessments and the Regional Greenhouse Gas Initiative.

Evidentiary hearings were held on November 3, 2009. The OCA now files this Main Brief pursuant to the procedural schedule adopted in this proceeding.

II. PPL'S SMART METER PLAN

On August 14, 2009, PPL Electric Utilities Corporation (PPL or Company) filed its Petition with the Pennsylvania Public Utility Commission (Commission) pursuant to Section 2807(f)(1) of the Public Utility Code and pursuant to the Implementation Order entered by the Commission at Docket No. M-2009-2092655. In 2002, PPL began the full-scale deployment of an advanced meter infrastructure (AMI) system for all of its customers. PPL St. No. 1 at 5. By 2004, the deployment was complete and the Company had installed smart meters for all of its metered customers. Id. The Company's AMI system consists of meters, communications, infrastructure, computer services and applications that allow PPL to remotely read the meters for all of its customers. PPL St. No. 1 at 5.

Beginning in 2005, the Company upgraded its AMI System through installation of a Meter Data Management System. PPL St. No. 1 at 5. This system provides for multiple advanced metering applications including: (1) a customer interface that allows customers to analyze their specific usage; (2) a data storage base that provides storage for two years of hourly reads from all customers; (3) a billing system that allows hourly billing; (4) an energy settlement system that allows electric generation suppliers to serve customers based on actual hourly usage; and (5) advanced load analysis capabilities. Id. PPL witness Douglas Krall also testified that the Company's AMI system is able to currently perform the 6 minimum capabilities set forth in the Commission's Implementation Order. PPL St. No. 1 at 5. Since all of PPL's metered customers currently have advanced meters installed at their service locations, the Company proposes to

study, test and pilot applications which enhance and expand upon the capabilities of its current advanced meter infrastructure. PPL St. No. 1 at 6.

In its Plan, PPL proposes to use the 30-month grace period set forth in the Commission's Implementation Order to conduct a series of pilot programs and technology evaluations. PPL St. No. 1 at 7. In order to demonstrate compliance with the 6 minimum capabilities set forth in the Commission's Implementation Order and further evaluate the 9 additional capabilities identified in the Implementation Order, PPL has proposed 15 pilot programs. See, PPL Exh. No. 2. The objectives of these efforts are to extend the capabilities of the current AMI deployment to meet the capabilities set forth in the Implementation Order and to further enhance the AMI system so that customers are better able to use the system to conserve energy and to enhance the system for providing better reliability. Id. The Company estimates that the cost of these studies will be approximately \$16.4 million. If justified by the results of the pilot programs and the technology evaluations, PPL intends to deploy the additional capabilities and alternative technologies. The incremental cost of this deployment will be approximately \$45.6 million, for a total cost over the five year period of approximately \$62 million. PPL Exh. No. 1 at 7. Further, PPL proposes to recover its Smart Meter Plan costs through its Act 129 Compliance Rider that was filed with PPL Electric's Energy Efficiency and Conservation Plan on July 1, 2009, as modified to recover smart meter technology costs. PPL St. No. 3 at 6.

In general, the OCA finds the Company's approach of conducting further pilot programs to be reasonable. PPL is well-positioned to meet the Act 129 requirements due to its prior installation of an AMI system. The use of pilot programs to assess the costs and benefits of additional capabilities will provide the necessary information for the next steps. The OCA has developed some specific recommendations in its testimony regarding the details of the

Company's proposed pilot programs to ensure that they are properly designed and that necessary information is gathered to properly assess the next steps. The OCA has also identified pilot programs that may not be appropriate for consideration in this proceeding.

III. SUMMARY OF ARGUMENT

In general, the OCA supports the Company's proposed SMP Plan. However, there are some areas of the Plan in need of modification. Specifically, the OCA proposes that PPL:

- commit to a collaborative process in order to identify a consistent format through which information on each of the pilot programs is provided, including information on costs and benefits;
- commit to collaborative meetings at least three times per year to review progress and results from the pilot projects;
- commit to providing additional details as to the implementation of the pilot programs, the data to be collected, the methodology for selecting participants and control groups, the collection of baseline data, and the presentation of project results prior to implementation;
- develop a detailed consumer education and outreach program with particular emphasis on consumers challenged by technological advances prior to any new AMI program or technology deployment;
- recover its Smart Meter Plan costs through a separate and distinct surcharge other than the Act 129 Compliance Rider;
- recognize interest on SMP under- and over-collections;

- with respect to the rate of return applicable to SMP rate base, utilize the Company's actual capital structure and embedded costs of debt and preferred stock at the time of each annual update of the surcharge; and
- with regard to the cost of equity applicable to smart meter charges, utilize (initially) a 10.1 percent return on equity until its next distribution base rate case or until a procedure is developed by the Commission for determining an updated return on equity.

Further, the OCA recommends that the following proposed pilot programs (set forth in Section 6C(5)) not be approved as part of this Smart Meter Plan:

- service limiting
- prepay
- feeder meter

The OCA's concerns with these pilot programs are discussed below.

V. ARGUMENT

A. SMP Plan.

1. Introduction.

In compliance with Act 129 and the Commission's Implementation Order, PPL has proposed 15 pilot programs to obtain information regarding the functionality and costs associated with a range of Smart Meter capabilities and extensions to the Company's current Smart Metering system. The pilot programs proposed by the Company follow the functional system requirements specified in the Commission's Implementation Order and PPL proposes to conduct the pilot programs during the 30-month Grace Period defined in the Implementation

Order. The OCA is in general agreement with the Plan proposed by the Company, but offers the following recommendations and modifications to PPL's proposal.

2. Collaborative Process.

As set forth by OCA witness Christina Mudd, the OCA submits that, for the pilot programs approved by the Commission, the Company should work with interested stakeholders in a collaborative process to design the pilots. OCA St. No. 1 at 6. Further, following agreement on pilot designs, the Company should present the details of the pilots to the Commission for review and approval. As explained by Ms. Mudd:

The information obtained through the pilot program will serve as a basis for requesting full implementation of the program, pending the successful completion of the pilot. Often, implementation costs are substantial. The perspectives of multiple stakeholders are useful to ensure that the full range of information is gathered and that all options, designs and uses of the tested functionality are considered so that a sound decision can be made.

Id. As to particular issues related to pilot program design that should be recognized and emphasized in this process, the OCA submits that the pilot program design should incorporate the means to obtain cost and benefit information and that the cost and benefit information be obtained on a customer class basis, where feasible and appropriate. OCA St. No. 1 at 7. Absent this detailed cost and benefit information, it will not be possible to meaningfully evaluate the cost-effectiveness of particular programs. Further, costs and benefits need to be evaluated on an incremental basis. Therefore, cost information for each pilot should be detailed and broken down by cost category, e.g., equipment costs, installation, software costs, long-term O&M costs, and public education/outreach costs. Similarly, benefits should be functionally characterized (e.g., energy conservation, capacity cost savings, reliability, reduced utility costs) and separately identified by customer class. OCA St. No. 1 at 7.

In his Rebuttal Testimony, PPL witness Godorov states that PPL agrees to consult with parties in a collaborative process regarding the details of each pilot program. PPL St. No. 2-R at 2. Further, the Company proposes to hold semi-annual meetings to review the status of the Plan, as well as the specific pilots and evaluations, with stakeholders. Id. Mr. Godorov also states that the Company proposes to identify pilot program design decisions required during the upcoming six-month period prior to the meeting and seek input on those decisions during the meeting. PPL St. No 2-R at 2. However, Mr. Godorov testifies that the Company opposes the notion that it be required to seek Commission review of each and every pilot. Id. at 3. In her Surrebuttal Testimony, Ms. Mudd clarified that Commission review of each pilot is unnecessary, but continued:

As an alternative to Mr. Godorov's proposal, I recommend that the collaborative work to identify a consistent format through which information on each of the pilot programs is provided, including information on costs and benefits. I further recommend that, following agreement as to the data and information to be collected, analyzed and presented, that the collaborative meet a minimum of three times per year to review progress and results from the pilot projects. There will still need to be filings with the Commission to move forward with any decisions or technology deployment that may result from the pilot projects.

OCA St. No 1S at 2. Ms. Mudd further stated that additional details regarding the implementation of the pilot programs, the data to be collected, the methodology for selecting participants and control groups, the collection of baseline data, and the presentation of project results must also be considered as the pilot projects are refined prior to implementation. Id. at 3. The OCA submits that Ms. Mudd's alternative is appropriate and should be accepted. As such, the OCA submits that PPL should hold collaborative meetings at least three times per year and should be directed to collect the data identified by Ms. Mudd as part of its pilot projects.

3. Pilot Programs.

a. Direct Access to Information (Section 6B(3)).

In its Implementation Order, the Commission directs that smart meter technology must support bidirectional data communications capability and open standards and protocols that comply with nationally-recognized non-proprietary standards, such as IEEE 802.15.4. Order at 16. Regarding bidirectional data communications, PPL states that its current AMI deployment employs two different bidirectional approaches to communicating with meters. PPL Exhibit No. 2 at 6. A signal is sent to the meter and the meter responds by either taking an action or by transmitting information back to the Company. Currently, the Company's smart meter system allows customers to obtain pricing and consumption information through the Company's website, Energy Analyzer. OCA St. No. 1 at 8.

PPL labels the pilot project set forth in Section 6B(3) as expected to "provide customers with direct access to and use of price and consumption information." PPL Exhibit No. 2 at 3-3. As proposed by the Company, the pilot program is to test alternative mechanisms to impart near-real-time information to the customer. These mechanisms are expected to include in-home displays, automatic text messages, and emails. Id. The Company states that this information on consumption and pricing would facilitate customer participation in real-time pricing programs and critical peak pricing programs. The OCA submits that the proposed costs of this pilot appear to be reasonable as an evaluation of an expansion from the current website-based communication protocol to a more direct means of communication. However, as set forth by Ms. Mudd, there is insufficient detail in the Company's Smart Meter Plan to make a determination as to whether the pilot program will evaluate the best means of communication for particular customer segments such as the elderly, the infirm, or low-income customers. OCA St.

No. 1 at 9. Furthermore, the Company has not identified lower tech options for providing information to customers that do not have access to text messaging or email. Such lower tech options might include, for example, automated telephone calls or broadcast media. Id.

The OCA submits that, as currently described, the pilot program does not appear to contemplate an evaluation of the needs of all customer classes and segments. There are existing studies which can inform on these issues. Ms. Mudd testified that:

Studies analyzing the critical peak pilot programs of the California Smart Grid Pilot Programs find that lower income, higher usage customers, those with usage greater than 660 kWh/month and with annual household incomes under \$50,000 have insignificant bill savings and some customers actually experience bill increases under the critical peak pricing arrangement. The pilot programs further demonstrate, however, that low-income customers who received both pricing and targeted education and outreach from community groups reduced their average daily consumption by 2.6 percent during critical peak periods. Customers receiving only price information reduced their average daily consumption by only 1 percent during critical peak periods. *Quantifying the Benefits of Dynamic Pricing in Mass Markets: Appendix F. Impact of Dynamic Pricing on Low-Income Customers*, the Brattle Group, prepared for Edison Electric Institute, January 2008, pp. 3-4.

OCA St. No. 1 at 9-10. As set forth by Ms. Mudd, the OCA submits that this pilot Program should be designed to explicitly address the best method or methods for providing price information, outreach, and education by customer class and segment. Id. at 10. The pilot should explore how time-sensitive pricing, e.g., critical-peak pricing and peak-time rebates affect households with different usage and income levels given various communication methods.

The pilot should also compare the best mixture of communication strategies. The OCA submits that the Company should be directed to work with interested parties to design this pilot so that it performs the analysis and collects the data recommended by OCA witness Mudd.

b. Automatic Control Of Consumption (Section 6B(6)).

According to the Company's Plan, PPL's current AMI deployment can support automatic control of electricity consumption by the customer, the Company or a third-party at the customer's request. PPL Exhibit No. 2 at 8. The Company's current AMI deployment can also be made capable of communicating through a meter to control the consumption of end-use equipment with upgrades that will be part of the proposed pilot studies.

PPL proposes this pilot project set forth in Section 6B(6) to exercise the capabilities to support the "automatic control of the customer's electric consumption." PPL Exhibit No. 2 at 3-6. The pilot is further described as involving the installation of load control devices on various types of customer equipment, including heating, ventilation, and air conditioning systems. Id. As set forth by Ms. Mudd, however, there are similar load control programs currently available or expected to be available for residential customers in PPL's service territory. OCA St. No. 1 at 11. Specifically, under the Company's EE&C Plan, there is a Direct Load Control Program. Ms. Mudd raised a concern about the impact of this pilot on PPL's EE&C Plan.

Under this program, a control device would be installed on the customer's central air conditioning/heat pump unit to allow the unit to be cycled off for 15 minutes of every half hour during the peak period. A Demand Response Conservation Service Provider will provide turnkey services to manage and administer the program at an average cost of \$260 per participant over the first four years of the program. Id. A similar Direct Load Control Program is also available to the small commercial and industrial sector customers at approximately the same cost. Were the Commission to approve the program for implementation, PPL estimates the cost

at \$4,200,000 over the first 4 years of the program based on the participation of 5,000 customers annually for an average per participant cost of \$210.

The OCA submits that PPL should demonstrate that creating a new load response program will have an incremental benefit above and beyond the benefits already available to customers through the EE&C Demand Response program. Further, the pilot program cost must be determined to be cost effective and expected to reach a population that may not otherwise participate through the Conservation Service Provider. Finally, PPL should establish that this pilot program is not duplicating efforts and creating confusion with mixed marketing campaigns. At this juncture, PPL has not made these necessary showings. As such, the OCA recommends that the Commission direct PPL to make the necessary showings before proceeding with this pilot.

c. Remote Disconnection And Re-Connection (Section 6C(1)).

PPL's current AMI deployment could allow for remote disconnection and reconnection through the use of a meter with a service disconnect integrated into the meter or a disconnect collar installed at the customer's premise. PPL Exhibit No. 2 at 8. The Company chose not to install the devices with every meter during initial deployment. *Id.* The Company has conducted a pilot of the disconnect collar option, but the pilot only included accounts where payment was current. PPL Exhibit No. 2 at 8-9.

Under this pilot program, the Company would conduct remote disconnections and reconnections in premises where frequent move-in/move-out situations occur.³ PPL does not provide any quantitative assessment of benefits associated with the disconnect/reconnect capability. However, PPL currently disconnects service only as a special request by a customer

³ PPL is proposing to exclude terminations for non-payment from this pilot. *See*, PPL Exhibit No. 2 at 20. The OCA agrees with this proposal.

in a move-in/move-out situation and generally leaves the meter energized assuming a quick turnover in building occupants. OCA St. No. 1 at 13. As set forth by Ms. Mudd, the primary benefit of the remote disconnect and reconnect capability is avoiding electricity consumption from meters left connected during periods of a property's vacancy rather than from avoidance of labor and other related costs. Id.

The OCA submits that, prior to conducting a pilot study and evaluation of the benefits of remote disconnect/reconnect, PPL should quantify the current costs to the utility from the unbilled energy associated with inactive live-meter accounts. The cost-effectiveness of the remote disconnect/reconnect feature needs to be evaluated on the basis of actual Company operations, that is, recognizing that PPL often does not actually disconnect a meter but rather bears the cost of unbillable energy. In other words, cost-savings stem principally from unbilled energy avoidance rather than from avoidance of labor and related costs associated with manual disconnect/reconnects. The OCA submits that PPL must gather actual data based on its current practices to properly assess this pilot.

In addition, PPL needs to detail the procedures that it will follow to determine when it is safe to disconnect or reconnect electric service. One situation that could arise if the capability is to be used in situations where tenants often move in and out of multi-family buildings will be the need for procedures to assure that the property is indeed vacant and that the property will not be damaged if electric service is turned off. Disconnecting a property from electric service, sight unseen, is a different proposition than the current procedures typically followed when a customer moves out of a residence and service is physically terminated. The Company should further work with the collaborative group to develop procedures and ensure data collection prior to engaging in this pilot.

d. Ability to Upgrade of Minimum Capabilities (Section 6C(5)).

i. Introduction.

Under Section 6C(5), the Company outlines 4 pilots that it intends to undertake. See, PPL Exhibit No. 2 at 3-11 through 3-15. The Company states that these pilots are designed to facilitate technical and economic evaluations that consider obsolescence of the infrastructure equipment, replacement with new technology to allow extension of the minimum requirements and support additional capabilities. As explained below, the OCA has significant concerns with three of these pilots: service limiting, pre-pay metering and feeder meters. The OCA submits that these 3 pilots should not be approved as part of this Smart Meter Plan.

ii. Service Limiting and Pre-Payment.

In its Plan, PPL states that it desires to work directly with Commission staff and interested parties on the objectives for a pilot to evaluate a service limiting program. PPL Exhibit No. 2 at 26. The Company further states that it will conduct a pilot to deploy this enhanced capability at 500 customer accounts from 2013 through 2014. Id. With respect to pre-payment programs, the Company states that it also desires to work directly with Commission staff and interested parties on the objectives for a pilot which will be conducted in 2013 that will be offered to 500 residential customers. PPL Exhibit No. 2 at 27. The OCA submits, however, that, neither of these programs should be approved in this proceeding. As Mr. Godorov testified, use of a service limiter will result in all electric service being disconnected from a home. Tr. at 117. In other words, once the amperage threshold has been exceeded, e.g., the threshold level tied to the service limiting amount, the customer will be disconnected and will not have electricity unless the customer physically goes out to the meter and resets it. For the pre-

payment pilot, once the customer has used up the pre-payment amount, and has not added more payment to their balance, service will be automatically terminated.

As set forth by Ms. Mudd, these programs raise significant public policy implications that need to be addressed and resolved by the Commission prior to any pilot programs. Ms. Mudd highlighted some of these issues:

there are important policy issues, including public safety issues, related to the Utility's use of these capabilities. Should these pilot programs be approved by the Commission in the current proceeding, which I do not recommend, the Commission should require the development of a complete set of procedures that ensures that the pilot targets an appropriate customer segment and is completely voluntary. The Company should implement a rigorous screening to ensure that customers such as low income, elderly, ill, and disabled customers, who could be placed at risk by such a program, are not selected for participation. In particular, participation in service-limiting and prepay programs should in no sense be a precondition imposed by the utility for reconnection of service following disconnection for customer non-payment.

OCA St. No. 1 at 15.

The OCA submits that these two pilots should not be approved in this proceeding given the significant unaddressed policy implications. The Commission recognizes this very point and stated that there will be a separate proceeding which will address, among other things, the policy implications of the use of smart meters for service limiting and pre-payment. OCA St. No. 1 at 14. Specifically, the Commission stated that:

the Commission agrees that the significant policy implications of service limiting and prepaid service should be addressed in another proceeding prior to requiring such capability in smart meters. Therefore, we have removed support for service-limiting, and prepaid service as a minimum capability requirement.

See, Implementation Order at 18.

In his Rebuttal Testimony, Mr. Godorov states that the Commission has not precluded EDCs from including service limiting programs in their Smart Meter Plans. Therefore, the Company is willing to work with OCA and interested parties to develop the details of this pilot program through a collaborative process and would report the results of the pilot to the collaborative participants. PPL St. No. 2-R at 11. While the Commission may not have precluded EDCs from including these capabilities, further investigation of the potential risks to consumers from employing service limiting and prepayment capabilities should be a precursor to any pilot or implementation. For example, the Company proposes to exclude households with children, the elderly or seriously ill individuals from its service limiting program, but not from its pre-payment program. Potential ramifications of this lack of exclusion for the pre-payment program need to be considered. Further, Company witness Godorov concedes that, with respect to the service limiting pilot, PPL: 1) has not “done any in-depth due diligence”, 2) has not “gotten into specific details on the design”, and 3) has not determined the type of notice to be given prior to disconnection (and when). Tr. at 117-122. As to the pre-payment pilot, Mr. Godorov also conceded that PPL has not: 1) undertaken any studies addressing whether energy usage declines from pre-payment programs are the result of concerted efforts to reduce usage or simply going without electricity once the pre-payment expires, 2) identified safeguards to be employed to assure that customers can recharge their meters, and 3) reviewed any materials addressing low-income customers. Id. at 123-126. The Company’s lack of analysis on these points is of concern to the OCA and further support the Commission’s Implementation Order that calls for a separate proceeding to consider all of the implications of the use of such capabilities.

Additionally, as Ms. Mudd stated, the extent to which service limiting and prepayment programs conflict with regulations that require an on-site visit on the day of termination need to be resolved prior to the Company engaging in any pilot project. OCA St. No 1S at 4. Ms. Mudd further explained that smart meter technology provides several options that can potentially be used to assist payment-troubled customers without placing them at the undue risk of service limitation or automatic termination. OCA St. No. 1 at 14. For example, technology can be used to collect data to assist the payment troubled customer in understanding their energy usage or assist in targeting conservation or weatherization services. Id. Therefore, the OCA submits that there are more fruitful and beneficial applications of such technology that can be explored until the Commission considers the public policy implications of such pilots as those being considered by the Company.

The OCA continues to submit that PPL's service limiting and prepay pilot programs should not be approved as part of this proceeding.

iii. Feeder Meter.

At Section 6(C)(5) of its Plan, PPL sets forth the parameters of its feeder meter pilot program. As set forth on OCA Cross-Examination Exhibit No.1, the Company clarifies that:

Feeder meters are devices that monitor the total flow of energy on a radial distribution line from a substation, not the branch flow of energy to a particular customer as measured by an individual meter.

See, OCA Cross-Examination Exhibit No.1. As OCA witness Ms. Mudd testified, the feeder meter pilot project is a distribution system upgrade rather than a customer smart meter capability. OCA St. No. 1 at 17. Company witness Krall also confirmed that feeder meters will not provide information to end users that will assist in conservation or load shifting. Tr. at 102.

OCA witness Ms. Mudd concluded that the Company has not demonstrated that feeder meters enhance the capabilities of the customer's advanced meter infrastructure. Consequently, the OCA submits that this pilot project should not be approved as part of the PPL Smart Meter Plan. The OCA submits that the Company can undertake this pilot in the normal course of business if it so desires and seek recovery of the associated costs via standard base rate recovery. However, this program should not be treated as part of PPL's Act 129 obligation and provided the special ratemaking treatment afforded Act 129 costs.

4. Customer Education and Outreach.

As explained by Ms. Mudd, PPL has not provided a plan for customer education and outreach as part of this proceeding other than what is minimally described as part of specific pilot projects. OCA St. No. 1 at 17. The OCA submits that, as PPL conducts its pilot programs and (with Commission approval), moves ahead with the deployment of additional AMI capabilities, the interface between the Company and the customer will change. As further explained by Ms. Mudd, greater use of home area networks, two-way communications, and the host of other options that will be available to customers to control their use of electricity and the time at which that electricity is used will require a significant effort in customer education to ensure efficient use of the system. *Id.* at 17-18. However, some customers will be challenged by data and information issues and may have a difficult time navigating through various pricing options and technology choices. Those customers less comfortable with new technology may need targeted outreach to educate them on lower tech options to take advantage of and benefit from AMI technology advances. OCA St. No. 1 at 18.

Therefore, as set forth by Ms. Mudd, the OCA submits that PPL should include detailed plans for education and outreach programs as part of its submission to the Commission

prior to the implementation of any new AMI program or technology deployment. Id. at 18. Such plans might be developed as an outcome of a pilot project or technology evaluation. Further, PPL should develop a detailed customer outreach and education plan to ensure that particularly sensitive groups obtain the means to effectively employ the new technological options and are capable of evaluating the range of service options available to make informed decisions regarding their own energy consumption choices.

B. SMP Cost Recovery.

1. Recovery Mechanism.

PPL proposes to recover its SMP costs through its Act 129 Compliance Rider submitted in its Energy Efficiency and Conservation (EE&C) Plan. PPL St. No. 3 at 6. As set forth by OCA witness Mr. Catlin, the OCA does not object to smart meter costs and EE&C costs being combined for billing purposes and included as part of distribution rates on customers' bills. OCA St. No.2 at 10. As Mr. Catlin testified, however, the two recovery mechanisms should each be contained in separate tariff riders with a separately stated tariff rate for each Plan. OCA St. No. 2 at 10. OCA witness Catlin explained the reasons for separate EE&C and SMP riders as follows:

First, separate tariffs are appropriate because recovery of smart meter costs and EE&C costs are addressed under two separate provisions of Act 129. Second, separate tariffs should be implemented for transparency reasons. That is, customers (or other interested parties) should be able to separately identify what the applicable charges are for the recovery of PPL's Smart Meter Plan costs and its EE&C costs.

Id. Under PPL's proposal, the amount of the charge for SMP costs (or EE&C costs) would not be readily identifiable, therefore, the OCA submits that separation of SMP costs from the ACR for tariff purposes is appropriate. PPL witness Mr. Kleha testified that the Company is willing to

accept such separation if the Commission desires such. Tr. at 140-141. The OCA, therefore, submits that the Commission should require individual tariff riders for these two types of charges.

2. Interest Charges.

As explained by Mr. Catlin, in its initial filing (as clarified through discovery), PPL indicated that it would include interest on over and under-collections at the Residential Mortgage Interest Rate. OCA St. 2S at 1. In rebuttal, Company witness Kleha has indicated that if the Company's proposal to recover its SMP costs through its ACR is accepted, it would not include interest on over and under-collections. PPL St. No. 3R at 7.⁴ The OCA submits that the decision whether or not to recognize interest on PPL's SMP over or under-collections should not be based on whether interest is included on EE&C over and under-collections. Pursuant to Act 129, the Company's EE&C costs are to be limited to 2% of revenues for four years. Further, EE&C revenues are initially expected to exceed expenses, but expenses are then expected to exceed revenues. As a result, costs and revenues will even out over the four-year effective period for the EE&C program, thereby negating the need for charging interest on EE&C over or under-collections. Conversely, as set forth by Mr. Catlin, the incurrence and recovery of SMP costs is not limited to four years and these costs are also not limited to a fixed percentage of revenues. OCA St. 2S at 2. Additionally, PPL's SMP costs include not only expenses, but potentially significant capital expenditures. Consequently, the same treatment of interest that was adopted for the more limited EE&C program is not appropriate for PPL's more open-ended Smart Meter Program.

⁴ This position relates to the Commission's acceptance of the proposal not to include interest on the Energy Efficiency and Conservation (EE&C) costs to be recovered through the ACR.

Although Mr. Kleha argues that if PPL Electric is not permitted to charge interest on under-collections, it will not be able to recover its costs on a ‘full and current’ basis” (PPL St. No. 3R at 7), the OCA submits that if the Company is not required to pay interest on over-collections, it will be allowed to more than recover its costs on a full and current basis from ratepayers. Therefore, the OCA submits that PPL should recover its SMP costs with interest on over- and under-collections.

3. Rate of Return.

As set forth by Company witness Kleha, PPL’s SMP costs will include both capital and operating costs. PPL St. No. 3 at 4. Therefore, PPL will (on a going-forward basis) provide an appropriate segregation of these costs based on existing cost accounting practices and procedures. Id. This segregation will include the facilities and equipment placed in service, the applicable annual depreciation associated with facilities and equipment, return on those investments, and applicable Operation and Maintenance (“O&M”) expenses related to the Company’s Plan and applicable taxes. PPL St. No. 3 at 3-4. With regard to establishing the rate of return applicable to its smart meter rate base, PPL proposes to utilize the capital structure ratios, cost components and the overall cost of capital approved by the Commission in the Company’s most recent fully litigated rate case at Docket No. R-00049255. OCA St. No. 2 at 4. OCA witness Catlin set forth his recommendation for establishing the rate of return to be applicable to SMP charges in his Direct Testimony. As Mr. Catlin testified:

I would recommend that PPL’s actual capital structure and embedded costs of debt and preferred stock at the time of each annual update of the surcharge be utilized, subject to the condition that the debt and equity ratios be reasonably consistent with those found appropriate in PPL’s then most recent rate case. With regard to the cost of equity, it is my recommendation that the equity return rate approved by the Commission in PPL’s last fully litigated base rate proceeding (or explicitly set forth in a settlement

agreement) be utilized if the final order in that proceeding was entered not more than three years prior to the effective date of the updated Smart Meter Surcharge.

OCA St. No. 1 at 4. As can be seen, the positions of the OCA and the Company do not differ significantly in this respect. However, as PPL's last fully-litigated rate case was in 2004--more than 3 years ago--the OCA submits that data from that case is outdated and should not be used. In the absence of sufficiently current data, OCA witness Catlin recommended two possible approaches. First, Mr. Catlin recommended that the Commission establish a procedure that would allow for the use of the most recent "Report on the Quarterly Earnings of Jurisdictional Utilities" (Quarterly Earnings Report) prepared by the Bureau of Fixed Utility Services (FUS) and released by the Commission at the time of the filing. OCA St. No. 2 at 5. As set forth by Mr. Catlin, the Commission has adopted a similar approach for establishing the return on equity for other surcharges under automatic adjustment clauses. *Id.* at 5. Specifically, Mr. Catlin testified:

In allowing the implementation of Distribution System Improvement Charges (DSICs) for water utilities under Section 1307 of the Public Utility Code, the Commission established a requirement that if a return on equity had not been established in a litigated rate case within two years of the effective date of the DSIC, then the equity return rate calculated by the Commission Staff (now Bureau of Fixed Utility Services) was to be utilized.

OCA St. No. 2 at 5. However, recognizing that a transparent procedure for determination of the equity return by FUS has not yet been established, Mr. Catlin's alternate recommendation is that a return on equity of 10.1% be used.⁵ OCA St. No. 2S at 6. As Mr. Catlin testified, this return is consistent with the most recent litigated Pennsylvania electric distribution cases filed by

⁵ Mr. Catlin found that the equity cost rates for electric utilities have been inconsistent and volatile in the Quarterly Earnings Reports over the past several years. Given this volatility--and lack of transparency--the existing electric utility returns published in the Quarterly Earnings Reports do not appear to be appropriate for use in establishing the return on equity to be used for PPL's and other electric distribution utilities' smart meter charges.

Metropolitan Edison Company (Met-Ed) and Pennsylvania Electric Company (Penelec) in 2006 and decided in early 2007. Id. at 6.

The OCA submits that the Commission should develop a procedure for FUS to begin publishing a return on equity that would be specifically applicable for smart meter charges in instances where an EDC has not had a base rate case in three years. OCA St. No. 2 at 6. As Mr. Catlin explained, for the long term, the procedure for calculating the return on equity should be established through a generic proceeding in which the FUS participates. OCA St. No. 2 at 6. In such a proceeding, it would also be appropriate for the established return to reflect the lower risk associated with the guaranteed recovery of all SMP costs through a fully reconcilable surcharge. In the interim, as Mr. Catlin testified:

To establish PPL's initial Smart Meter ACR, it would be my recommendation that the 10.1 percent return on equity approved for Met-Ed and Penelec be utilized.

OCA St. No. 2 at 6.

In his Rebuttal Testimony, Mr. Kleha disagrees with Mr. Catlin's proposals and reiterates the Company's position that PPL's most recent rate case data should be used. PPL St. No 3-R at 4-5. However, Mr. Kleha admitted that he would not propose utilizing cost data from a rate proceeding more than 10 years old. Tr. at 171. In such an instance, Mr. Kleha testified:

I would at that point try to determine whether or not there was some reasonable compromise that can be made, and maybe enlist the aid of parties to those proceedings that were in the base rate proceedings to determine what approach we might use to come up with that reasonable basis on which to utilize data.

Id. at 172.

However, as Mr. Catlin stated in his Surrebuttal Testimony:

My recommendation reflects my position that an ROE approved in a rate case five or six years ago, or as many as 15 or 20 years or go

for some EDCs, cannot be assumed to be representative of an EDC's cost of equity today. Capital costs change over time and a procedure needs to be adopted to address those situations where more than a few years have passed since a determination of an EDC's cost of equity has been made.

OCA St. No. 2S at 4. Therefore, the OCA submits that a return on equity of 10.1% be used until the Commission establishes a return on equity for SMP charges or PPL has another base rate case. Mr. Kleha's suggestion that utilizing cost data from rate cases litigated more than 3 years ago is not appropriate.

D. Cost Allocation.

As previously set forth, PPL has already deployed smart meters on its system and is recovering the costs and reflecting the benefits of that initiative in its base rates. In this case, PPL is proposing to conduct certain dedicated pilot programs to evaluate possible enhancements of its existing system. The Company is proposing to assign the costs of each pilot program to the customer class participating in that pilot program. As Mr. Kleha explained:

The Company will directly assign all costs to the extent possible. Any common costs or administrative costs that cannot be directly assigned will be allocated among the three customer classes that I described previously. To accomplish that allocation, the Company will use a ratio of direct costs assigned to that class divided by direct costs for the entire system.

PPL St. No. 3 at 9. OCA witness Mr. Catlin agreed with this proposal given the nature of the pilot program costs here and testified that:

PPL has already deployed smart meters on its system and is currently proposing to conduct certain pilot programs to evaluate possible enhancements of its existing system. It is my understanding that PPL is proposing to assign the costs of each pilot program to the customer class participating in that pilot program. The program management costs associated with all of the pilot programs are proposed to be allocated to customer classes in proportion of the pilot program costs directly assigned to each class.

...
In light of the nature of the costs for which PPL is seeking recovery, PPL's proposal is reasonable.

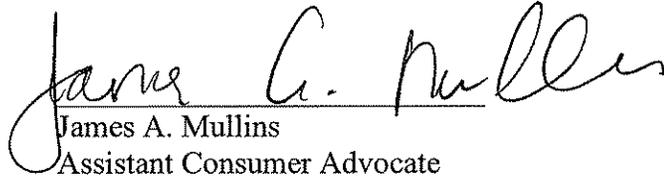
OCA St. No. 1 at 8. The OCA submits that, in light of the nature of the costs for which PPL is seeking recovery, PPL's proposal is reasonable at this time.

V. CONCLUSION

For the reasons set forth above, the OCA respectfully requests that the Commission approve PPL's SMP subject to the following recommendations: 1) that PPL commit to a collaborative process in order to identify a consistent format through which information on each of the pilot programs is provided, including information on costs and benefits, 2) that PPL commit to collaborative meetings at least three times per year to review progress and results from the pilot projects, 3) that PPL commit to providing additional details as to the implementation of the pilot programs, the data to be collected, the methodology for selecting participants and control groups, the collection of baseline data, and the presentation of project results prior to implementation, 4) that the service limiting pilot, pre-payment pilot, and feeder meter pilots in Section 6(C)(5) of the SMP be rejected, 5) that PPL recover its Smart Meter Plan costs through a separate and distinct surcharge other than the Act 129 Compliance Rider, 6) that PPL recognize interest on SMP under- and over-collections, 7) that PPL, with respect to the rate of return applicable to SMP rate base, utilize the Company's actual capital structure and embedded costs of debt and preferred stock at the time of each annual update of the surcharge, 8) that PPL, with regard to the cost of equity applicable to smart meter charges, utilize (initially) a 10.1 percent return on equity, and 9) that PPL develop a detailed consumer education and

outreach program with particular emphasis on consumers challenged by technological advances prior to any new AMI program or technology deployment.

Respectfully Submitted,



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Dated: December 4, 2009

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of PPL Electric Utilities Corporation :
for Approval of a Smart Meter Technology : Docket No. M-2009-2123945
Procurement and Installation Plan :

APPENDICES TO THE
MAIN BRIEF OF THE
OFFICE OF CONSUMER ADVOCATE

APPENDIX A: PROPOSED FINDINGS OF FACT

1. On August 14, 2009, PPL Electric Utilities Corporation (PPL or Company) filed its Petition with the Pennsylvania Public Utility Commission (Commission) pursuant to Section 2807(f)(1) of the Public Utility Code and pursuant to the Implementation Order entered by the Commission at Docket No. M-2009-2092655.
2. In 2002, PPL began the full-scale deployment of an advanced meter infrastructure (AMI) system for all of its customers. By 2004, the deployment was complete and the Company had installed smart meters for all of its metered customers. PPL St. No. 1 at 5.
3. The Company's AMI system consists of meters, communications, infrastructure, computer services and applications that allow PPL to remotely read the meters for all of its customers. PPL St. No. 1 at 5.
4. Since all of PPL's metered customers currently have advanced meters installed at their service locations, the Company proposes to study, test and pilot applications which enhance and expand upon the capabilities of its current advanced meter infrastructure. PPL St. No. 1 at 6.
5. In its Plan, PPL proposes to use the 30-month grace period set forth in the Commission's Implementation Order to conduct a series of pilot programs and technology evaluations. PPL St. No. 1 at 7.
6. In order to demonstrate compliance with the 6 minimum capabilities set forth in the Commission's Implementation Order and further evaluate the 9 additional capabilities identified in the Implementation Order, PPL has proposed 15 pilot programs. PPL Exh. No. 2.
7. The objectives of these efforts are to extend the capabilities of the current AMI deployment to meet the capabilities set forth in the Implementation Order and to further enhance the AMI system so that customers are better able to use the system to conserve energy and to enhance the system for providing better reliability. PPL Exh. No. 2.
8. The Company estimates that the cost of these studies will be approximately \$16.4 million. If justified by the results of the pilot programs and the technology evaluations, PPL intends to deploy the additional capabilities and alternative technologies. The incremental cost of this deployment will be approximately \$45.6 million, for a total cost over the five year period of approximately \$62 million. PPL Exh. No. 1 at 7.
9. PPL proposes to recover its Smart Meter Plan costs through its Act 129 Compliance Rider that was filed with PPL Electric's Energy Efficiency and Conservation Plan on July 1, 2009, as modified to recover smart meter technology costs. PPL St. No. 3 at 6.

APPENDIX B: PROPOSED CONCLUSIONS OF LAW

1. PPL's filed Smart Meter Plan requires modification to fully satisfy the requirements of 66 Pa. C.S. §§ 2807(f)(1) through 2807(f)(3) and the terms of the Commission's Implementation Order at Docket No. M-2009-2092655.
2. Recovery of PPL's SMP costs through a separate and distinct surcharge other than the Act 129 Compliance Rider is authorized by, and consistent with, 66 Pa. C.S. §§ 1307 and 2807(f)(7).

APPENDIX C: PROPOSED ORDERING PARAGRAPHS

1. PPL's Smart Meter Plan is approved with the following modifications:
 - a. PPL is directed to conduct a collaborative process in order to identify a consistent format through which information on each of the pilot programs is provided, including information on costs and benefits.
 - b. PPL shall hold collaborative meetings at least three times per year to review progress and results from the pilot projects.
 - c. PPL is directed to provide additional details as to the implementation of the pilot programs, the data to be collected, the methodology for selecting participants and control groups, the collection of baseline data, and the presentation of project results prior to implementation.
 - d. PPL's proposed service limiting pilot and pre-payment pilot in Section 6(C)(5) of the Company's Smart Meter Plan are rejected.
 - e. PPL's proposed feeder meter pilot in Section 6(C)(5) shall not be conducted as part of the Smart Meter Plan.
 - f. PPL shall recover its Smart Meter Plan costs through a separate and distinct tariff rider other than the Act 129 Compliance Rider.
 - g. PPL shall recognize interest on SMP under- and over-collections.
 - h. PPL shall, with respect to the rate of return applicable to SMP rate base, utilize the Company's actual capital structure and embedded costs of debt and preferred stock at the time of each annual update of the surcharge.
 - i. PPL shall, with regard to the cost of equity applicable to smart meter charges, utilize a 10.1 percent return on equity until another return on equity is established by the Commission.
 - j. PPL shall develop a detailed consumer education and outreach program with particular emphasis on consumers challenged by technological advances prior to any new AMI program or technology deployment.

CERTIFICATE OF SERVICE

Petition of PPL Electric Utilities Corporation :
for Approval of a Smart Meter Technology : Docket No. M-2009-2123945
Procurement and Installation Plan :

I hereby certify that I have this day served a true copy of the foregoing document, Main Brief of the Office of Consumer Advocate, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code Section 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 4th day of December 2009.

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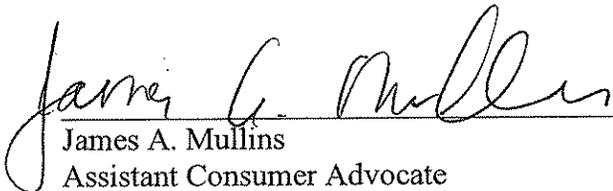
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