

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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

**Petition of PPL Electric Utilities Corporation for Approval of a
Smart Meter Technology Procurement and Installation Plan**

Pursuant to Act 129 of 2008 (“Act 129” or the “Act”), P.L. 1592, 66 Pa. C.S. § 2807(f), PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) hereby files this Petition seeking approval of its Smart Meter Technology Procurement and Installation Plan (“Smart Meter Plan” or “Plan”). This filing is being made pursuant to the Implementation Order of the Pennsylvania Public Utility Commission (the “Commission”) entered at Docket No. M-2009-2092655 on June 24, 2009.¹ As described herein and in the Smart Meter Plan, PPL Electric has been a leader in the implementation of smart meter technology in Pennsylvania. All of PPL Electric’s metered customers currently have smart meters installed at their service locations, and these smart meters are able to provide all of the minimum capabilities and many of the additional capabilities set forth in the Commission’s Implementation Order. Therefore, under its Smart Meter Plan, the Company proposes to study, test and pilot applications that enhance and expand upon the capabilities of PPL Electric’s current advanced meter infrastructure (“AMI”). These plans are described below and in further detail in the Smart Meter Plan. In addition, PPL Electric proposes to recover its Smart Meter Plan costs through its Act 129 Compliance Rider

¹ *Smart Meter Procurement and Implementation*, Docket No. M-2009-2092655, entered on June 24, 2009 (“Implementation Order”).

("ACR") that was filed with PPL Electric's Energy Efficiency and Conservation Plan ("EE&C Plan") on July 1, 2009, as modified to recover smart meter technology costs. The modified ACR is provided as Attachment 4 to the Plan.

By this Petition, the Company respectfully requests that the Commission approve PPL Electric's Smart Meter Plan, as well as the Company's plans to recover its Smart Meter Plan costs through the ACR.

I. INTRODUCTION

1. PPL Electric provides electric distribution, transmission and provider of last resort services to approximately 1.4 million customers in a certificated service territory that spans approximately 10,000 square miles in all or portions of 29 counties in eastern and central Pennsylvania. PPL Electric is a "public utility" and an "electric distribution company" as those terms are defined under the Public Utility Code, 66 Pa. C.S. §§ 102 and 2803.

2. PPL Electric's attorneys are:

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PPL Electric's attorneys are authorized to receive all notices and communications regarding this filing.

3. Act 129 became effective on November 14, 2008. Act 129 requires electric distribution companies ("EDCs") to implement multiple programs to promote energy efficiency and conservation by electric customers.

4. Act 129 requires EDCs to file EE&C Plans with the Commission that include specific proposals for implementing energy efficiency and conservation measures to meet the reductions in energy consumption mandated by the Act. 66 Pa. C.S. § 2806.1(b). Pursuant to this requirement, the Company filed its EE&C Plan with the Commission on July 1, 2009 at Docket No. M-2009-2093216.

5. Act 129 also requires EDCs to file one or more time of use ("TOU") rates and real-time price plans by January 1, 2010. 66 Pa. C.S. § 2807(f)(5). Pursuant to this requirement, PPL Electric filed a TOU plan with the Commission on July 31, 2009 at Docket No. R-2009-2122718.

6. In addition, Act 129 requires EDCs to file Smart Meter Plans within 9 months after the effective date of the Act. The Company is meeting this statutory requirement through this filing.

7. On June 24, 2009, the Commission issued its Smart Meter Implementation Order. The Implementation Order establishes the standards that each Smart Meter Plan must meet and provides guidance to EDCs for meeting these standards.

8. Specifically, the Implementation Order provides that Smart Meter Plans must include a summary of the EDC's current deployment of smart meter technology and plans for future development. The Discussion Section of the Implementation Order also provides guidance with respect to the following five major categories:

- (a) The Plan Approval Process;
- (b) Smart Meter Deployment;
- (c) Smart Meter Capabilities;
- (d) Access to Smart Meters and Data; and
- (e) EDC Cost Recovery.

9. For ease of reference, PPL Electric has structured its Smart Meter Plan in the same order as the Commission's Implementation Order.

II. PPL ELECTRIC'S SMART METER PLAN

A. Current Smart Meter Deployment

10. In the Spring of 2002, PPL Electric implemented an advance meter pilot to approximately 10,000 customers in the Allentown/Bethlehem, Pennsylvania area. Under the pilot, PPL Electric tested the technical capabilities of its smart meter equipment and established procedures for system-wide deployment of its AMI system.

11. Later in 2002, PPL began full scale deployment of its AMI system, and by September 2004 had installed smart meters for all of its metered customers. The PPL Electric AMI system consists of meters, communications, infrastructure, computer services and applications that allow the Company to remotely read the meters for all of its customers.

12. Beginning in 2005, the Company upgraded its AMI System through installation of a Meter Data Management System (“MDMS”). The MDMS 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 supplies to serve customers based on actual hourly usage; and (5) advanced load analysis capabilities.

13. On pages 29-30 of its Implementation Order, the Commission sets forth 6 minimum capabilities that EDCs Smart Meter Plans must be able to perform. The minimum capabilities include:

- (a) Bidirectional data communications;
- (b) Recording usage on at least an hourly basis once per day;
- (c) Providing customers with direct access to and use of price and consumption information;
- (d) Providing customers with information on their hourly consumption;
- (e) Enabling TOU rates and real-time price programs; and
- (f) Supporting the automatic control of the consumer’s electric consumption.

14. As explained in Section 3(c) of the Smart Meter Plan, PPL Electric’s AMI currently is able to perform the 6 minimum capabilities set forth in the Implementation Order.

15. The Company’s AMI communicates bidirectionally with its meters and records electricity usage on an hourly basis. See 13(a) & (b) above.

16. In addition, customers can obtain access to price and consumption information, including their hourly consumption on the Company’s website. See 13(c) and (d) above.

17. PPL Electric currently offers TOU rates and real-time price programs to its customers. The Company has offered, time-varying rates to customers since the 1980s, and on July 31, 2009, filed for Commission approval of TOU rates for its residential and small commercial and industrial (“C&I”) customers. In addition, the Company has offered hourly pricing for large C&I customers since 2007. See 13(e) above.

18. PPL Electric’s current AMI system also is able to support the automatic control of customers’ electric consumption. See 13(f) above. In fact, the Company has included direct load control and load curtailment programs in its EE&C Plan.

19. In addition to the 6 minimum capabilities, the Commission’s Implementation Order sets forth 9 additional capabilities that EDCs should evaluate in their Smart Meter plans. Implementation Order, p. 30. These 9 additional capabilities include:

- (a) Ability to remotely disconnect and reconnect;
- (b) Ability to provide 15-minute or shorter interval data;
- (c) On-board meter storage that complies with nationally recognized non-proprietary standards;
- (d) Open standards and protocols that comply with nationally recognized non-proprietary standards;
- (e) Ability to upgrade minimum capabilities;
- (f) Ability to monitor voltage at each meter;
- (g) Ability to remotely reprogram the meter;
- (h) Ability to communicate outages and restorations; and
- (i) Ability to support net-metering of customers’ generators.

20. PPL Electric's AMI currently is able to perform many of these additional capabilities. Details regarding how the Company's AMI meets these capabilities are provided in Section 3(c) of the Plan.

B. Future Smart Meter Deployment – Evaluations And Programs

21. As noted above, PPL Electric's AMI system currently is able to perform all of the minimum capabilities and many of the additional capabilities set forth in the Implementation Order.

22. To further enhance its AMI capabilities, PPL Electric proposes to use the 30 month grace period provided by the Commission in the Implementation Order to conduct a series of pilot programs and technology evaluations. The objectives of these efforts are to extend the capabilities of the current AMI deployment to meet the additional 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 system reliability.

23. PPL Electric 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, the Company intends to deploy additional or alternative technologies. PPL Electric estimates that 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.

24. As noted above, the Company's AMI system currently allows customers direct access to their price and consumption information through the Company's website. The Company believes that it will be useful to enhance this capability, and therefore, proposes a pilot program which would provide customers direct, in-home access to price and consumption information. See Plan Section 6(B)(3). PPL Electric also proposes to pilot programs that offer

additional communication channels such as near real-time e-mail and text messages to customers. See Plan Section 6(B)(3).

25. In addition to the communication methodologies described above, the Company intends to work with customers, EGSs and interested third parties to provide hourly consumption data in formats that are clearer and easier to understand. See Plan Section 6(B)(4). PPL Electric believes that this initiative will better assist customers in using their hourly consumption data to make pricing decisions.

26. In support of TOU rates and real-time pricing programs, PPL Electric proposes to make modest investments in its infrastructure to enhance TOU and hourly data delivery through pilot installation of meters with additional storage capabilities. PPL Electric also proposes to evaluate options that would enhance its ability to collect data on 15-minute intervals. See Plan Section 6(B)(5).

27. One of the minimum smart meter capabilities set forth in the Implementation Order involves the automatic control of customers' electric consumption. As explained above, PPL Electric's AMI system currently supports this capability. However, in order to test and enhance this capability, the Company intends to conduct a pilot under which it will install load control devices on customers' equipment. If the pilot is successful, the Company anticipates a wider deployment of the program to customers. See Plan Section 6(B)(6). PPL Electric believes that this program will provide many benefits including: (1) allowing customers to take better advantage of TOU options, (2) enabling customers to shed load during peak pricing periods, and (3) providing for load control in emergency situations.

28. In 2011, the Company intends to conduct a remote disconnection/reconnection pilot at premises where frequent move in/move outs occur. See Plan Section 6(C)(1). If the pilot

is successful, PPL Electric proposes to make a wider deployment to an estimated 50,000 customer locations from 2012 to 2014. See Plan Section 6(C)(1). The Company expects to see multiple benefits from this program including: (1) reduced consumption on inactive meters, (2) reduced disconnection/reconnection costs, (3) automation of the connection/disconnection process, (4) supporting emergency load control, and (5) other benefits.

29. The Company also intends to conduct performance evaluations to expand its application of 15-minute data retrieval and collection from its meters. See Plan Section 6(C)(2). These evaluations will enhance the Company's ability to collect data on 15-minute intervals.

30. PPL Electric's smart meters currently meet nationally recognized storage standards. However, as part of its Smart Meter Plan, the Company intends to upgrade its meters for new construction, meter replacements and customer requests to allow for additional storage capability. See Plan Section 6(C)(3).

31. Under the Plan, the Company will continue incorporating open standards and protocols in its AMI system. In 2010, the Company intends to conduct a pilot whereby it will incorporate communication systems in customers' homes. See Plan Section 6(C)(4). The Company expects that this program will contribute to energy conservation through automated home controls, provide the basic hardware for special rate initiatives, such as peak pricing, and give customers better information to control their energy usage.

32. Over the next five years, PPL Electric also intends to evaluate applications that will generally enhance and upgrade its AMI system. This evaluation may position PPL Electric for Smart Grid related applications and operations. See Plan Section 6(C)(5). In addition, the Company believes that this evaluation may allow it to implement technologies that improve

system performance and avoid the premature replacement of its AMI system as technology advances.

33. In the Implementation Order, the Commission states that it is not requiring smart meter systems to support service-limiting capabilities, but that an EDC may include this capability in its plan. Implementation Order, p. 18. PPL Electric believes that this capability should be characterized as service extending, not service limiting, because it has the potential to extend service to customers that otherwise may be terminated for inability to pay. Because PPL Electric already has advanced smart meters and supporting infrastructure in place, PPL Electric proposes to conduct a service-extending pilot from 2013 to 2014. See Plan Section 6(C)(5). The Company believes that there will be multiple benefits from such a program including: (1) maintaining service to and reducing revenue loss from customers with an inability to pay, (2) improving customer's payment behavior, (3) reducing disconnection/reconnection costs, and (4) other benefits.

34. Likewise, in its Implementation Order, the Commission stated that EDCs could include pre-pay capabilities in their Smart Meter Plans. Implementation Order, p. 18. Because PPL Electric already has an advanced metering system in place, the Company also proposes to implement a prepay metering pilot in 2013. See Plan Section 6(C)(5). The Company believes that this pilot will have multiple benefits including: (1) encouraging conservation, (2) educating customers regarding energy payments, (3) enhancing payment behavior and (4) other benefits.

35. The Company also proposes to conduct a pilot to refine and enhance its momentary interruption monitoring. See Plan Section 6(C)(5). The Company anticipates that this pilot will assist it in identifying and correcting system outages.

36. As part of its Smart Meter Plan, PPL Electric also proposes to install feeder meters as part of a pilot program. See Plan Section 6(C)(5). Feeder meters significantly enhance the Company's ability to monitor its system to reduce system problems. If successful, the Company intends to deploy feeder meters on a system-wide basis.

37. With regard to voltage monitoring, in 2011, the Company intends to pilot a program to enhance its ability to monitor voltage at customers' meters. See Plan Section 6(C)(6). The Company anticipates that this pilot will alert PPL Electric to system voltage problems and allow it to correct these problems on a proactive basis.

38. The Company also proposes to conduct a pilot to use its AMI system for proactive outage detection. See Plan Section 6(C)(8). If the pilot is successful, the Company proposes to implement a system-wide program.

39. With regard to net metering, the Company proposes to pilot new bidirectional meters that measure energy flow at the Company's contact point and output of the customer's generator. See Plan Section 6(C)(9). If the pilot is successful, the Company would implement an expanded program beginning in 2011.

40. PPL Electric's proposed evaluations, pilots and programs are described in detail in Attachment 3 of the Plan. In addition, the Company has provided a Timeline and Budget for these programs as Attachments 1 and 2, respectively, to its Plan.

III. ACCESS TO SMART METERS AND DATA

41. As noted in the Implementation Order, Act 129 requires EDCs, with customer consent, to make available direct meter access and electronic access to customer meter data to third parties. 66 Pa.C.S. § 2807(f)(3).

42. In the Implementation Order, the Commission directs that EDCs provide:

- (a) Nondiscriminatory access for retail electric suppliers and third parties;

- (b) Open, proprietary two-way access for electric suppliers and third parties;
and
- (c) Full electronic access to customers and their representatives to meter data
upon customer consent.

Implementation Order, p. 24.

43. The Commission also directs that each EDC plan address standards and formats for electronic data communication with customers and third parties.

44. As indicated in its Smart Meter Plan, PPL Electric currently conforms to ANSI C12.19 communication standards. See Plan Section 5(A). The Company notes that communication protocols continue to evolve. PPL Electric will continue to conform to industry standards as requirements are developed by ANSI, IEC and NEMA Standard Organizations.

IV. COST RECOVERY

45. As stated above, PPL Electric is proposing to recover its smart meter technology costs through the ACR that it submitted in its EE&C Plan filing at Docket No. M-2009-2093216, as modified to reflect smart meter costs. In Attachment 4 to the Smart Meter Plan, the Company is providing both a final version of the expanded ACR and a "track changes" version to facilitate review of the modifications required to recover smart meter technology costs.

46. It is important to note that some details of the initial ACR are being litigated in the EE&C proceeding at Docket No. M-2009-2093216. If the Commission makes any changes to the ACR in its final order in that proceeding, the Company will incorporate those changes in the expanded ACR proposed in this Plan.

47. The Company has provided a budget for its proposed evaluations and pilot programs in Attachment 2 of the Plan. PPL Electric notes that the budget figures that are provided are estimates based upon PPL Electric's experience with its current AMI system.

Given that these programs don't begin until 2010 at the earliest and that many continue for several years, the estimates that have been provided could be higher or lower than actual costs. Therefore, PPL Electric requests that in the Commission's Order approving this Plan, the Commission expressly state that PPL Electric's cost recovery is not limited to the budget estimates that have been provided for evaluations, pilots and programs that are approved by the Commission.

V. EVIDENTIARY HEARINGS

48. Neither Act 129 nor the Commission's Implementation Order require hearings on smart meter plans. The Implementation Order provides that comments to the smart meter plans are to be filed by September 25, 2009 and that there will be at least one technical conference scheduled for each plan during October, 2009. The Implementation Order further provides that the plans will be referred to the Office of Administrative Law Judge "for such proceedings as may be deemed necessary" leaving open the distinct possibility that hearings will not be required. Therefore, it is not clear whether the Company's Plan will be subject to evidentiary hearings. Accordingly, the Company has not included any written direct testimony in its filing. As an alternative, PPL Electric has appended to the Plan, in Attachment 5, affidavits supporting all aspects of the Plan from the following PPL Electric managers:

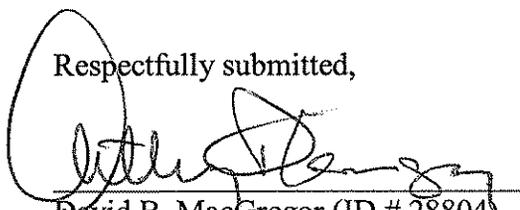
- a. Douglas A. Krall, Manager -- Regulatory Strategy
- b. Michael S. Godorov, Manager -- AMR Operations
- c. Joseph M. Kleha, Manager -- Regulatory Compliance and Rates

49. In the event PPL Electric's Plan is set for evidentiary hearings, the Company will submit, at the appropriate time, written direct testimony.

VI. CONCLUSION

WHEREFORE, PPL Electric Utilities Corporation respectfully requests that the Pennsylvania Public Utility Commission approve the Smart Meter Plan and allow PPL Electric to recover its costs of implementing the Smart Meter Plan through the Company's Act 129 Compliance Rider.

Respectfully submitted,



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Date: August 14, 2009

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