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February 2, 2015

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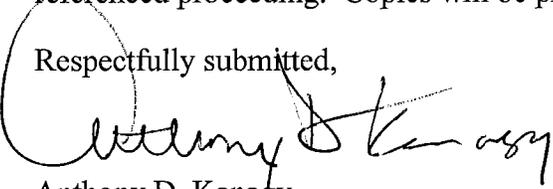
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
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400 North Street, 2nd Floor North
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**Re: Petition of PPL Electric Utilities Corporation for Approval of Its Smart Meter
Technology Procurement and Installation Plan
Docket No. M-2014-2430781**

Dear Secretary Chiavetta:

Enclosed please find the Reply Brief of PPL Electric Utilities Corporation for the above-referenced proceeding. Copies will be provided as indicated on the Certificate of Service.

Respectfully submitted,



Anthony D. Kanagy

ADK/skr
Enclosure

cc: Honorable Susan D. Colwell
Certificate of Service

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of § 1.54 (relating to service by a participant).

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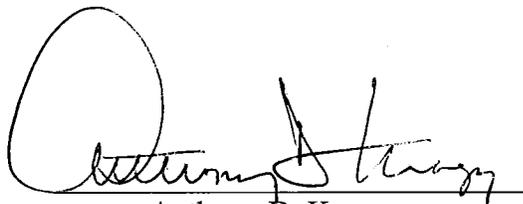
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Anthony D. Kanagy

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of PPL Electric Utilities Corporation :
for Approval of Its Smart Meter Technology : Docket No. M-2014-2430781
Procurement and Installation Plan :

**REPLY BRIEF OF
PPL ELECTRIC UTILITIES CORPORATION**

TO: ADMINISTRATIVE LAW JUDGE SUSAN D. COLWELL

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Smart Meter Procurement and Installation, Docket No. M-2009-2092655, Order entered June 24, 2009 *passim*

I. INTRODUCTION

On January 13, 2015, PPL Electric Utilities Corporation (“PPL Electric” or the “Company”), the Office of Small Business Advocate (“OSBA”), PP&L Industrial Customer Alliance (“PPLICA”) and the Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania (“CAUSE-PA”) filed Initial Briefs in the above-captioned proceeding. PPL Electric hereby files its Reply Brief in response to the Briefs filed by the other parties.

II. PROCEDURAL HISTORY

A detailed procedural history is set forth on pages 1-3 of the Company’s Initial Brief.

III. STATEMENT OF THE QUESTIONS INVOLVED

PPL Electric’s position regarding the relevant questions involved in this proceeding is set forth on pages 3-4 of the Company’s Initial Brief.

IV. BURDEN OF PROOF

PPL Electric’s position regarding the burden of proof in this proceeding is set forth on pages 4-5 of its Initial Brief.

V. SUMMARY OF ARGUMENT

PPL Electric filed its SMP in order to comply with the Commission’s 2010 Order which directed the Company to file a SMP that fully complies with Act 129. The Company’s current PLC metering system cannot meet all of the requirements of Act 129. The new RF Mesh system will meet all of the requirements of Act 129 and will allow the Company to provide the additional capabilities set forth in the Commission’s *Implementation Order* more efficiently and

more cost effectively than any “band-aid” fixes or upgrades to the Company’s existing PLC metering system.

OCA and OSBA argue that the Company should delay implementation of its SMP. These arguments are contrary to the Commission’s guidance in other proceedings and is also inconsistent with the deployment schedules approved by the Commission for all other EDCs in Pennsylvania that are subject to Act 129. In addition, the Company’s deployment schedule is prudent from an asset management perspective because it will allow the Company to avoid unnecessary investment in a PLC metering system that is nearing the end of its useful life and has provided many benefits to customers.

CAUSE-PA takes an extreme position that PPL Electric’s SMP should be denied because the Company’s Plan does not estimate what the costs of HAN devices will be and does not explain how HAN technology will be provided to low-income customers. CAUSE-PA argues this position despite providing no testimony in this proceeding disputing PPL Electric’s proposal to require all customers to pay for their own HAN devices. If CAUSE-PA wanted to challenge this part of PPL Electric’s SMP, CAUSE-PA should have presented testimony on this issue which would have allowed PPL Electric and other parties to respond on the record. There is certainly no basis to reject PPL Electric’s SMP. Moreover, any issues related to providing HAN devices to low-income customers can be addressed in PPL Electric’s next universal service proceeding.

With respect to cost savings, it is important to emphasize that PPL Electric has already implemented a first generation AMI system and reflected considerable savings to customers in base rates. The installation of a second generation system will preserve these existing benefits which are already fully reflected in base rates, but will provide only limited incremental savings.

In addition, it will be expensive and extremely difficult, if not impossible, to accurately calculate any incremental savings and then to separate them from existing savings already reflected in base rates. Smart meter savings should either be reflected in base rates or in the SMR, but not both. The Commission has previously approved reflecting savings from PPL Electric's first generation SMP in base rates. The OCA has provided no legitimate basis to adopt a different and fundamentally inconsistent approach for PPL Electric's second generation SMP, particularly given the small level of incremental savings and the difficulty in calculating and separating incremental savings from existing savings already built into base rates.

OSBA argues that the Company should credit net present value costs to the SMR. OSBA's proposal is unprecedented and fundamentally flawed, as it would require the Company to credit rate payers for costs that are not in rates and that rate payers will never pay. This proposal simply makes no sense.

OSBA also argues that the Company should develop separate SMR charges for the individual Small C&I rate schedules to address alleged cost subsidy concerns among Small C&I customers. As explained herein and in the Company's Initial Brief, the OSBA's cost subsidy concerns are overstated. Moreover, adopting the OSBA's proposal would be inconsistent with the rate structure for the Company's current SMR and all of its other 1307 automatic adjustment clauses.

The Company addresses issues regarding the privacy of customer data as a subset of its cybersecurity plan. The Company has developed a high level data privacy plan and will perform a comprehensive assessment of data privacy issues as its SMP is deployed. OCA and CAUSE-PA argue that the Company should develop a separate data privacy plan with the assistance of interested stakeholders. PPL Electric disagrees with this recommendation. PPL Electric follows

all applicable Commission guidance with respect to data privacy and will take all necessary measures to protect customers' data. Holding stakeholder meetings to develop a separate data privacy plan is unnecessary and will increase costs for customers.

The Company has developed a Supplier Portal to provide EGSs and authorized third parties access to customer data. The Company follows all applicable Commission guidance with respect to the operation of its Supplier Portal. PPLICA and CAUSE-PA argue that the Commission should revise its policy regarding EGS and third-party access to the Company's Supplier Portal which places the burden on EGSs and third-parties to ensure that they have the appropriate customer authorization to access data. PPL Electric believes that this issue applies to all utilities in Pennsylvania that have or will have supplier portals. Therefore, the Company does not believe that it is appropriate to address this issue in an individual EDC's smart meter proceeding. If the Commission decides to address this issue, it should be addressed in a generic proceeding where all utilities have an opportunity to participate.

OCA and CAUSE-PA also argue that the Company should be required to file for Commission approval of any involuntary remote disconnection program, service limiting program or pre-pay metering program even if the Company is able to implement the program and follow all applicable Commission regulations. PPL Electric disagrees with this argument. The Company should not be required to file for Commission approval of a program if the program can be implemented to follow all Commission regulations.

Finally, PPLICA argues that the Company should be required to make a compliance filing that itemizes all line loss components. PPLICA did not present any testimony regarding this issue in this proceeding and presented this argument in its Main Brief for the first time. PPLICA also did not request that the Company provide information regarding line loss

components in discovery. PPL Electric should not be required to make a compliance filing to provide information that could have been asked in discovery and should have been addressed in testimony.

VI. ARGUMENT

A. COMPLIANCE WITH ACT 129 AND THE IMPLEMENTATION ORDER

1. Act 129 Issues.

a. PPL Electric's Current Metering System Does Not Meet The Requirements Of Act 129.

PPL Electric filed its Smart Meter Plan (“SMP”) in response to the Commission’s determination that PPL Electric’s current Power Line Carrier (“PLC”) Automated Metering Infrastructure (“AMI”) System does not provide all of the functionality required by Act 129. *Petition of PPL Electric Utilities Corporation for Approval of Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123945, Order entered June 24, 2010 (“*2010 SMP Order*”). Specifically, the Commission held that PPL Electric’s current PLC system did not provide customers with direct access to price and usage information. 66 Pa. C.S. § 2807(g). In the *2010 SMP Order*, the Commission directed PPL Electric to file a SMP that was fully compliant with Act 129. *2010 SMP Order*, p. 24. In a subsequent order entered on August 2, 2012, the Commission directed PPL Electric to file its Act 129 compliant SMP by June 30, 2010.¹ *Petition of PPL Electric Utilities Corporation for Approval to Modify its Smart Meter Technology Procurement and Installation Plan and to Extend its Grace Period*, Docket Nos. P-2012-2303075, M-2009-2123945, Order entered August 2, 2012 (“*2012 SMP Order*”).

¹ PPL Electric originally requested Commission authority to file its Act 129 compliant SMP by December 19, 2014. The Commission denied the Company’s request and shortened the time for PPL Electric to file its Act 129 compliant SMP until June 30, 2014. This is yet another indication that the Commission does not want PPL Electric to wait until 2025 to implement its Act 129 compliant SMP.

PPL Electric was required to file this SMP because the Commission held that PPL Electric's PLC AMI system did not meet the Act 129 requirements.

b. OCA's Argument That The PPL Electric PLC System Meets The Act 129 Requirements Is Contrary To The 2010 SMP Order.

OCA continues to argue that PPL Electric's PLC metering system meets all of the Act 129 requirements even though the Commission held that PPL Electric's PLC system did not provide customers with direct access to price and usage information. (OCA MB, p. 17.) It is OCA's opinion that web-based capabilities allow for direct access to pricing information and that actual usage information could be provided within 24 hours on PPL Electric's website. (OCA MB, p. 17.)

Contrary to OCA's assertions, providing pricing information on the web and providing usage information within 24 hours of actual use is not direct access. (See PPL Electric MB, pp. 13-14.) This is indirect access to meter data. *2010 SMP Order*, p. 22. Decreasing the time period for providing usage information from 48 hours to under 24 hours does not meet the Commission's interpretation of the direct access requirement. All other EDCs in Pennsylvania are meeting the direct access requirement through Home Area Networks ("HANs"), and the Commission held that PPL Electric would be compliant with the direct access requirement if its HAN pilot were successful. *2010 SMP Order*, p. 22. The Company's HAN pilot was not successful. Therefore, OCA's argument that PPL Electric's PLC system meets the Act 129 requirements is contrary to the Commission's *2010 SMP Order*.

c. OSBA's Arguments That Customers Will Not Benefit And Are Not Interested In Having Direct Access To Price And Usage Information Is Contrary To Act 129's Requirements And The Commission's Directives.

OSBA argues that the Company has not presented evidence that providing customers with direct access to price and usage information will provide a benefit to customers. (OSBA MB, p. 11.) OSBA also argues that PPL Electric's customers are less likely to have interest in direct access to price and usage information due to the history of PPL Electric's TOU programs. The OSBA's arguments should be denied.

OSBA's argument that customers will not benefit from having direct access to price and usage information is contrary to Act 129. Act 129 was enacted to provide smart meter benefits to customers and providing customers with direct access to price and usage information is required by statute. PPL Electric must implement this capability regardless of whether OSBA believes it will or will not benefit customers. Moreover, PPL Electric has presented evidence that the technology will benefit customers, including the ability to participate in time of use programs that utilize HANs or in-home displays. (PPL Electric St. No. 2-RJ, p. 2.) Further, OSBA's argument that the direct access to price and usage information functionality will not provide customer benefits is directly contrary to the Commission's *2010 SMP Order* which required PPL Electric to file a new SMP that would provide this functionality to customers. *2010 SMP Order*, p. 24. The Commission ordered PPL Electric to file a new SMP because it believed that providing direct access to price and usage information would benefit customers.

Likewise, OSBA's criticisms of PPL Electric's prior TOU programs do not support its contention that there is no customer interest in having direct access to price and consumption information. OSBA's conclusion in this regard is mere conjecture that is unsupported by any factual evidence.

OSBA's arguments that customers will not benefit from having direct access to price and consumption information are contrary to Act 129 and the Commission's *2010 SMP Order*.

2. Implementation Order Issues

a. **The New RF Mesh System Will Allow The Company To Better Provide Certain Of The Additional Requirements Set Forth In The Commission's Smart Meter Implementation Order.**

As explained by the Company's witness, Mr. Glenwright, 86% of the Company's existing PLC meters are prior generation electromechanical meters that do not meet 7 of the 15 additional *Implementation Order*² requirements, including: (1) remote connect/disconnect, (2) providing 15-minute or shorter interval data, (3) supporting on-board storage of meter data, (4) supporting open standards and protocols, (5) ability to upgrade minimum capabilities, (6) ability to remotely reprogram the meter, and (7) net metering of customer generators. (PPL Electric St. No. 2, p. 9.) The new RF Mesh system will allow the Company to provide all of the *Implementation Order* requirements.³

In addition, the new RF Mesh system will provide advanced capabilities over what can be provided with the Company's current PLC system or even an upgraded PLC system. (See PPL Electric Exhibit DRG 1-R.) The RF Mesh system will allow the Company to monitor voltage on a near real time basis. This enables capabilities such as advanced analytics supporting fault detection and fine-tuning power quality issues that could not be performed with a PLC system, resulting in improved service to customers. (PPL Electric Exh. DRG 1-R.) In addition, the RF Mesh system will allow the Company to better meet the *Implementation Order* capability of communicating outages and restorations. The RF Mesh system has the ability to obtain "last

² *Smart Meter Procurement and Installation*, Docket No. M-2009-2092655, Order entered June 24, 2009.

³ As explained in the Company's SMP, the RF Mesh solution will support the ability to provide 15-minute or shorter interval data. The Company will be able to build out the information technology platform to support this functionality if needed. (PPL Electric Exh. No. 1, p. 21.)

gasp” and power restoration messages so the system can proactively report outages and restorations. (PPL Electric Exh. No. DRG 1-R.) The PLC system does not have this ability. For these reasons, the RF Mesh system will allow the Company to better provide certain of the additional requirements set forth in the *Implementation Order*.

b. OCA’s Argument That The Company’s Existing System Can Provide Four Of The Nine Additional Capabilities In The *Implementation Order* Fails To Recognize Both The Substantial Costs Needed To Provide These Capabilities On A Broader Basis And The Limitations Of The PLC System.

OCA argues that PPL Electric’s PLC system can provide four of the nine additional capabilities set forth in the *Implementation Order* and, therefore, PPL Electric should delay SMP implementation. (OCA MB, pp. 19-20.) The four capabilities are: (1) remote connect/disconnect, (2) 15 minute or shorter interval data, (3) monitor voltage and (4) monitor outages. The OCA overstates the PLC system’s capabilities and fails to recognize its limitations.

The Company’s existing system is able to provide remote connect/disconnect functionality only where individual PLC meters have been upgraded with a remote connect/disconnect switch. Approximately 36,000 meters out of the total population of 1.4 million meters have this upgrade. As the Company explained: “The Company’s current PLC system can meet this requirement, but would require that new meters with remote service switches be installed in order to comply.” (PPL Electric Exh. No. 1, p. 14, ¶ 35.) Therefore, while the Company’s current PLC metering system would be able to provide the remote connect/disconnect functionality if the majority of meters were upgraded, in reality, this functionality can only be provided to a limited number of customers at this time. In addition, for the reasons explained below, it would be an unnecessary investment to upgrade the PLC meters with remote switches when the PLC meters will soon be replaced with RF Mesh meters. (See PPL Electric IB, p. 23.)

The OCA also argues that the Company's existing system is able to provide 15-minute or shorter interval data. The Company currently provides this data to customers in various ways including the MV-90 metering system for large customers, the PLC system for a small number of commercial customers and upon request through KYZ pulses. Under the RF Mesh system, the Company will be able to provide this data to customers in a consistent method through the RF mesh system and will not be constrained with bandwidth issues as currently experienced with the PLC system. (See PPL Electric Exhibit DRG 1-R.)⁴

The OCA also states that the Company can monitor voltage and monitor outages with its current PLC system. (OCA MB, p. 19.) As explained in Section VI(A)(2)(a) above, the Company's ability to monitor voltage and monitor outages is limited with its PLC system. These capabilities will be significantly enhanced under the new RF Mesh system. In its SMP, the Company explained these benefits as follows:

Additional benefits are also expected in the area of power quality, due to further development of the ability to monitor and analyze momentary outage and voltage issues. The ability to get information more frequently and across all smart meters will enhance our ability to analyze and proactively resolve distribution problems prior to customers notifying us about an issue. This will enable PPL Electric to better serve customers and utilize maintenance resources more effectively.

Outage management processes will be improved as PPL Electric introduces "last gasp" and power restoration message capability within the upgraded AMI solution. These capabilities will enable faster detection of outages and will speed power restoration processes. The upgraded AMI solution will also be able to provide near real-time outage status for individual meters. This will more accurately reflect the current state of restoration activity and allow resources to be utilized more effectively such that "OK on Arrival" occurrences (i.e. a power outage is restored on a separate, previous outage ticket) can be identified before a field crew is sent to a premise. As a result, the Company will be able to more effectively deploy and coordinate emergency restoration resources. This has the potential of translating into decreased time spent on storm restoration and reducing overtime and contractor expenditures.

⁴ PPL Electric may be required to add data storage capability to provide 15-minute or shorter interval data depending upon the number of customers requesting this type of data.

(PPL Electric Exh. No. 1, pp. 51 – 52.)

Moreover, and perhaps most importantly, even OCA admits that the Company's PLC system does not comply with the additional capabilities in the *Implementation Order* with respect to on-board meter storage of meter data, use of open standards and protocols and ability to upgrade minimum capabilities. (OCA MB, p. 19.)

The OCA's contentions regarding the ability of the Company's PLC metering system to meet the additional capabilities set forth by the Commission in the *Implementation Order* do not support the OCA's argument that the Company should delay smart meter implementation by 2 to 5 years.

c. The OSBA's Argument That The Commission Should Not Consider Whether PPL Electric's PLC System Can Meet The Additional Capabilities Set Forth In The *Implementation Order* Is Contrary To Commission Policy.

In its Main Brief, the OSBA argues that "... the fact that PPL's current PLC smart meters meet many, but not all, of these additional capabilities has no bearing on whether the Company's proposed smart meter upgrade should be implemented." (OSBA MB, p. 13.) This is a somewhat surprising and troubling argument. It is undisputed that the Company's current system is not compliant with Act 129 and relevant Commission orders. It also is undisputed that the Company's proposed new system does meet these requirements. OSBA seems to be saying that compliance with the law and relevant PUC orders is not relevant. While it may not be relevant to the OSBA, compliance with the law and PUC orders is certainly relevant, and quite important, to PPL Electric and presumably to the Commission..

In the *Implementation Order*, the Commission set forth 9 additional capabilities that it sought to have EDCs implement with their smart meter plans. *Implementation Order*, p. 30. The Commission further requested that EDCs explain the additional costs for implementing these

capabilities. However, the fact that the Commission requested that EDCs provide cost justification for implementing these technologies does not mean that the ability to implement the capabilities should be ignored when considering whether to adopt an EDC's SMP. These additional capabilities are clearly important to the Commission and as explained herein and in PPL Electric's Initial Brief, implementing these additional capabilities, such as remote connect/disconnect, voltage monitoring and enhanced outage monitoring provides clear benefits to customers.

PPL Electric explained that these additional capabilities can be provided to customers at minimal additional cost over a smart meter system that simply meets the minimum Act 129 requirements. (PPL Electric St. No. 2-R, p. 19.) PPL Electric also understands that other EDCs in Pennsylvania are implementing smart meter technology that provides many or all of the additional capabilities set forth by the Commission in the *Implementation Order*. (See e.g. PPL Electric St. No. 2-R, p. 19.) OSBA's argument that the Commission should not consider PPL Electric's enhanced ability to meet the additional requirements set forth in the *Implementation Order* with an RF Mesh system should be denied.

3. HAN Issues

a. CAUSE-PA's Arguments To Reject The Company's SMP For Failure To Provide An Estimate Of HAN Costs Should Be Denied.

CAUSE-PA submitted no testimony in this proceeding and provided no statement of its position. Despite this, CAUSE-PA takes the extreme position that PPL Electric's entire SMP should be denied because PPL Electric's SMP failed to explain how HAN devices will be financed for low-income customers. (CAUSE-PA MB, p. 13.) CAUSE-PA's argument should be denied.

As an initial matter, PPL Electric clearly explained in its initial SMP that “Customers will be responsible for purchasing and installing their own HAN devices as well as establishing the network connection with the Zigbee interface.” (PPL Electric Exh. No. 2, p. 13, ¶ 31.) PPL Electric also explained this in discovery. (See CAUSE-PA Exh. No. 1, CAUSE-PA to PPL Electric Set I-2, B.) If CAUSE-PA disagreed with PPL Electric’s proposal regarding who pays for HAN devices, CAUSE-PA should have presented testimony supporting its position. This would have allowed PPL Electric and other parties an opportunity to respond on the record. Instead, CAUSE-PA waited to present its position until its Main Brief and further takes the extreme position that PPL Electric’s entire SMP should be denied. CAUSE-PA’s position is extreme and should be denied.

PPL Electric’s position is that all customers should pay for their own HAN devices. No party contested this position on the record in this proceeding, and the Company’s position should be accepted. However, if CAUSE-PA believes that HAN technology should be provided to low income customers through PPL Electric’s Universal Service Program, CAUSE-PA can raise this issue in PPL Electric’s next Universal Service Plan proceeding. In the FirstEnergy Companies’ 2010 Smart Meter Order, the Commission stated as follows:

We are sensitive to the possibility that the cost of smart metering programs will have adverse financial impacts on low-income and other “vulnerable” customers. Nevertheless, we believe these adverse impacts should be effectively addressed by other means, including but not limited to consumer education programs, Customer Assistance Programs, and LIHEAP.

Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, and Pennsylvania Power Company for Approval of Smart Meter Technology Procurement and Installation Plan, Docket No. M-2009-2123950, Order entered June 9, 2010, p. 19.

CAUSE-PA was an active participant in this proceeding and had a full and fair opportunity to present evidence against PPL Electric's proposal to require all customers to purchase their own HAN devices. CAUSE-PA failed to do so. CAUSE-PA's argument that PPL Electric's SMP should be rejected for failure to explain how low income customers will receive HAN devices is unreasonable. CAUSE-PA's argument should be denied.

B. TECHNOLOGY ISSUES – RF MESH VERSUS PLC

As explained in the Company's Initial Brief, the Company conducted a multi-year evaluation of metering technologies with industry experts and determined that the best metering solution for PPL Electric was an RF Mesh system. (PPL Electric IB, pp. 11, 14 – 16.) In its Main Brief, the OCA argues that "the RF Mesh technology solution does not necessarily provide the optimal alternative for PPL at this time." (OCA MB, p. 22.) It is unclear whether OCA's criticisms of the RF Mesh system are due to the RF technology or the timing of the replacement. Therefore, PPL Electric will address both issues.

PPL Electric conclusively demonstrated in this proceeding that RF Mesh technology is the optimal metering solution for PPL Electric. As explained by Mr. Glenwright, the PLC system:

- is unable to support proactive outage notifications and last gasp technology
- is unable to read all meters at 15-minute intervals while still monitoring key performance meters
- is unable to provide HAN technology
- has a large degree of vendor risk.

(PPL Electric St. No. 2-R, pp. 11-12.)

Mr. Glenwright further explained as follows:

The decision to proceed with an RF Mesh solution was also the result of an extensive technical assessment, described in detail

within PPL Electric's Smart Meter Plan. This assessment included industry expertise from AMI solution vendors and consulting organizations.

The technical assessment evaluated the strengths and weaknesses of three AMI solution technology types: PLC, RF Mesh, and RF Point-to-Point. At a fundamental level, it was determined that the specific technical features required by PA Act 129 and the ensuing Implementation Order would require a large amount of additional bandwidth, exceeding the technical capabilities of PPL Electric's PLC solution. It was also concluded that these additional bandwidth needs could adversely affect system performance. This is especially true for the requirement to provide 15-minute interval data, which would result in an approximately four times increase in data traffic on an already strained PLC network.

As part of the technical assessment, PPL Electric also solicited detailed Requests for Information (RFIs) from leading AMI solution vendors in North America. Vendors were evaluated in several areas of their solution, including Meter technology, Head End technology, IT, and other areas such as network design.

This solution evaluation demonstrated the strengths of RF Mesh AMI technology relative to its peer technology types. These strengths include highly scalable network bandwidth, ease of implementing redundancies within the network, enhanced functionality such as last gasp and proactive outage notification, and robust research and development. PPL Electric also engaged with peer utilities during the technical assessment process and validated those strengths as witnessed in their own RF-based AMI solution deployments.

The technical assessment also showed that RF Mesh has a significantly higher market share relative to PLC in North America. This provides several benefits from business and risk perspectives. Choosing to pursue an RF mesh solution will allow PPL Electric to continue to leverage lessons learned from its peer utilities across North America, many of whom have deployed RF mesh AMI solutions since PPL Electric's initial AMI PLC deployment in 2002. Additionally, this will allow PPL Electric to learn from its peers in Pennsylvania and to provide the same level of service to its customers as its peers, all of whom have chosen an RF-based AMI solution to comply with Act 129 and Implementation Order requirements.

Cost and solution prudence was also an input into the decision to proceed with an RF Mesh solution. Through the development of an

AMI solution financial model, which incorporated cost information requested from vendors through the RFI process, the Company determined that the costs of upgrading its PLC network and continuing to use of an RF solution would not be a prudent expenditure. This was due in part to the inability of PLC technology to provide some of the unique features required by Act 129 and the Implementation Order, such as HAN technology. PPL Electric also determined that the development of technologies to support that functionality would be cost-intensive and cost-prohibitive.

* * *

Ultimately, PPL Electric believes that the benefits of RF Mesh exceed those of continuing to use PLC technology, the latter of which cannot be prudently adapted to meet future regulatory, business, and customer needs. Based on its extensive multi-year evaluations, with the assistance of industry experts from Black and Veatch and IBM, PPL Electric is confident that an RF Mesh solution presents the best possible choice for its future AMI solution and will best enable the Company to continue to provide a high level of service to its customers.

(PPL Electric St. No. 2-R, pp. 12-15.)

Mr. Glenwright further explained that RF technology is predominate in the United States and that new PLC technology implementation is primarily limited to small municipal utilities, cooperative utilities and rural territories for meter reading. In addition, only a small number of vendors continue to support PLC technology. In contrast, all of the major EDCs in Pennsylvania are implementing RF technology to comply with Act 129. (PPL Electric St. No. 2-R, p. 13.)

PPL Electric has conducted an extensive assessment of both RF and PLC technologies and has determined that an RF Mesh system is the optimal alternative. The OCA even admits that the RF Mesh system is “most likely to serve PPL’s needs in the long-term....” (OCA St. No. 1, p. 19, lines 18 – 21.)

The OCA’s primary issue with RF Mesh technology appears to be with the timing of when it is deployed. On page 22 of its Main Brief, OCA argues that “the RF Mesh technology

solution does not necessarily provide the optimal alternative for PPL **at this time.**” (Emphasis supplied.) Likewise, on page 25, OCA concludes this section of its Brief by stating that the Company should “maintain the existing PLC AMI system and work toward a more gradual, cost effective transition to a more advanced AMI system by 2025.” (OCA MB, p. 25.)

PPL Electric will address deployment schedule issues in more detail in Section VI(D), below. However, PPL Electric has demonstrated in this proceeding that there is no “gradual, cost effective transition” that would allow the Company to delay RF Mesh smart meter implementation. If PPL Electric delays its SMP, it will be required to make significant investments in failing PLC meters that would not be necessary if the Company implemented its SMP on its proposed schedule. A two-year delay would require an additional \$27.9 million in additional investments in PLC meters due to meter failure that would not be necessary if the Company’s implementation schedule is adopted. A four-year delay would increase the additional unnecessary investment in PLC meters to \$62.7 million. (PPL Electric St. No. 4-R, pp. 8-9.) In addition, delay increases risk associated with attempting to prolong the life of a system that is nearing the end of its useful life. Contrary to OCA’s assertions, there is no cost-effective solution for delaying SMP implementation. Delaying the SMP will increase costs for customers.

C. METER FAILURES

1. Introduction

PPL Electric installed its current PLC metering system beginning in 2002 through 2004. Many of the Company’s existing meters at that time were retrofitted with electronic communication modules. The electronic communication modules are more susceptible to wear from weather and heat, and do not have as long a life as meters without electronic

communication equipment. As a result, the depreciation schedule for the Company's meters with electronic communication equipment is 15 years.⁵

PPL Electric's current PLC meters are nearing the end of their useful life. This is evident from the increasing meter failure rates that PPL Electric has been experiencing. If PPL Electric's proposed deployment schedule is adopted, which has new RF Mesh meters being installed from 2017-2019, the PLC meters with electronic communication modules will have been in service for 15 years.

2. The Company's Meter Failure Rate Indicates That The Metering System Is Nearing The End Of Its Useful Life.

In its Main Brief, the OSBA argues that PPL Electric's meter failure rate does not justify replacing the PLC metering system. The OSBA also argues that the Company's meter failure rate is behind projections and that it may be more cost effective to replace failing meters. (OSBA MB, pp. 15-16.) OSBA's arguments should be denied.

First, PPL Electric has conducted a thorough assessment of its meter system by internal experts including Ms. Ogozaly who is the Company's Director of Advanced Metering and Data Operations, and through two separate studies of meter failure rates. (PPL Electric IB, p. 17.) While PPL Electric's meter failure rate of 2.35% for 2013 is slightly behind the 2.5% predicted in the joint PPL Electric/Aclara study, it is not far off. (Tr. 89) The 2.5% was a forecast that was developed approximately two years before 2013. Actual numbers will almost always be different than numbers that are forecasted two years in advance. The forecast of 2.5% was very close to the actual failure rate of 2.35% and demonstrates that the study is valid. Moreover, OSBA's argument that the meter failure rate has merely "drifted upward" from 25,634 in 2012 to 30,801 (forecast year-end) in 2014, ignores that PPL Electric's meter failure rate in 2007 was

⁵ Act 129 further provides that smart meters are to be depreciated on a schedule that does not exceed 15 years. 66 Pa. C.S. § 2807(f)(2)(iii).

10,000 meters. (See PPL Electric Exh. No. 1, p. 11.) PPL Electric's meter failure rate of 10,000 meters in 2007 to approximately 30,000 meters in 2014 is not merely "drifting upward." The increase in meter failure rates signifies that the current metering system is nearing the end of its useful life and that the meter failure rate could soon increase exponentially. OSBA would have the Company delay deployment of the new RF system and take the risk that the PLC meter failure rate will exponentially increase during the delay period, and at the same time require the Company to make significant unnecessary investment in a metering system that is nearing the end of its useful life. This is not reasonable or prudent.

Moreover, PPL Electric's actual meter failure rate is very close to the projections made in the 2011 PPL Electric/Aclara study. As explained by Ms. Ogozaly, the PPL Electric/Aclara study predicted a meter failure rate of 2.5% in 2013 and PPL Electric experienced a meter failure rate of 2.35%. This demonstrates that the meter failure projections in the joint PPL Electric/Aclara study were reasonable and further supports PPL Electric's proposed deployment schedule.

PPL Electric's actual meter failure rate has increased significantly since 2007 and is consistent with the meter failure rates predicted in the PPL Electric/Aclara study. No further analysis is necessary to determine that PPL Electric's PLC metering system is nearing the end of its life.

3. PPL Electric Does Not Have A Claim Against Aclara For Meters That Are Failing Because They Are Nearing The End Of Their Useful Life.

OCA argues that PPL Electric should "address the failing meters with Aclara." According to OCA, "The existing smart meters reached an age of 10-12 years as of the time of the 2013 analysis and should not have exhausted their useful life." (OCA MB, p. 27.) There are several flaws with OCA's argument, and it should be denied.

First, PPL Electric has not argued that all of the meter assets exhausted their useful life in 2013. PPL Electric is arguing that it should replace its meter assets in 2017-2019 (which is a 15 year in-service life) before they reach the end of their useful life and the meter failure rate exponentially increases. PPL Electric's meter failure rate has increased over the past several years and for 2013 was 2.35%. It is a normal occurrence for meter failures to increase as the asset base nears the end of its useful life. (PPL Electric St. No. 4-R, p. 13.) Some meters fail before 15 years and others fail after 15 years. They do not all fail at the same time.

PPL Electric's meter failure rate is four times the industry standard. However, this does not mean that the meters are faulty or were a bad investment. PPL Electric's meters are failing due to age. PPL Electric does not have a claim against Aclara for meters that are failing due to age. Moreover, customers have received substantial benefits from the PLC meters since they were installed beginning in 2002. These benefits have included a reduction in costs associated with eliminating physical meter reader positions, reduction in call center costs, reduction in costs to obtain special meter reads, and elimination of costs to manually monitor data quality. (PPL Electric Exh. No. DRG 3-R, p. 4.)

In its Main Brief, OCA argues that:

The purpose of Act 129 was to provide customers with access to smart meter technology. PPL has already provided this technology to ratepayers through its Aclara meters.

(OCA MB, p. 27.)

OCA's statement that PPL Electric has provided Act 129 smart meter technology to ratepayers through its Aclara meters is incorrect. PPL Electric began to install its PLC system approximately 6 years before Act 129 was enacted. In addition, the Commission held that PPL Electric's current PLC metering system did not meet the requirements of Act 129. Therefore,

PPL Electric has not already provided Act 129 smart meter technology to customers through its Aclara meters.

OCA also argues that PPL Electric began receiving meter credits in 2008 and that problems with meter failures have existed for a substantial amount of time. (OCA MB, p. 28.) OCA overstates this issue to attempt to bolster its argument. Even throughout the life of a meter asset, there will be a low level of failures for any type of meter. PPL Electric was proactive in obtaining credits for early meter failures which reduced costs for customers. However, this is not an indication that the meter system failed before it should have or that there is any claim against Aclara for meters that are failing due to old age.

D. IMPLEMENTATION TIMELINE

1. Introduction.

As explained in the Company's Initial Brief, PPL Electric has proposed a deployment schedule that will deploy new RF Mesh smart meters throughout its service territory by the end of 2019. This will be followed by a two-year stabilization period that will act as the final cut-over period during which time any PLC-related systems that are not needed will be decommissioned. (PPL Electric IB, pp. 20-21.) As also explained in PPL Electric's Initial Brief, the Company's deployment schedule is consistent with the deployment scheduled approved by the Commission for the other EDCs in Pennsylvania. Both OSBA and OCA argue that the Company should delay its deployment schedule. As explained in the Company's Initial Brief and below, the Company's deployment schedule should be adopted.

2. PPL Electric Is Not "Accelerating" Smart Meter Deployment.

Both OSBA and the OCA argue that PPL Electric can wait until 2025 to implement smart meter technology under Act 129 and that PPL Electric's proposed schedule "accelerates" deployment by four to five years. (OSBA MB, p. 14; OCA MB, p. 29.) Contrary to OSBA's

and OCA's assertions, PPL Electric is not "accelerating" deployment based upon Commission guidance and the deployment schedules approved for other EDCs in Pennsylvania.

As explained in the Company's Initial Brief, the Commission has ordered the FirstEnergy Companies to deploy smart meter technology prior to 2022. (PPL Electric IB, pp. 21 – 22.) In addition, all of the other EDCs have Commission-approved smart meter deployment schedules that provide for full deployment by 2020 or sooner. The Commission-approved deployment schedule for PECO provides for full deployment by 2014, the FirstEnergy Companies by 2019 and Duquesne Light by 2020. PPL Electric's proposed deployment schedule is not "accelerated" based upon Commission guidance and based on the schedules adopted for other EDCs. To the contrary, OSBA's and OCA's proposed schedules would significantly delay PPL Electric's smart meter deployment as compared to other EDCs and as compared to Commission guidance in the FirstEnergy proceeding.

In addition, PPL Electric is not significantly different from all of the other EDCs to justify such delay. Both PECO and Duquesne had AMI systems in place which eliminated the physical meter reading workforces. (PPL Electric St. No. 2-RJ, p. 2.) PPL Electric's proposed deployment schedule is consistent with the schedules adopted for the other EDCs and should be adopted without modification.

3. OSBA's Argument That PPL Electric Failed To Provide Justification For Its Deployment Schedule Is Erroneous.

In its Main Brief, the OSBA argues that the Company failed to provide any credible quantifiable justification for its massive investment program prior to the filing of rebuttal testimony and that this warrants the rejection of PPL Electric's SMP. (OSBA MB, p. 17.) OSBA argues that it was not provided with sufficient time to "fully evaluate this claim, conduct discovery, and respond fully in testimony." OSBA's argument appears to be directed toward the

Company's meter failure analysis. (See OSBA MB, p. 17, OSBA St. No. 2, p. 2.) OSBA's argument should be denied for several reasons.

OSBA argues that PPL Electric had an obligation to provide a cost-benefit analysis related to meter failures to justify "accelerating" meter deployment. This argument is incorrect for two reasons. First, as explained above, PPL Electric is not "accelerating" deployment. Second, there was no regulatory requirement or obligation for PPL Electric to provide a cost analysis related to PLC meter failures in its initial filing. PPL Electric explained in its initial filing that its PLC meter system was nearing the end of its useful life and that its PLC meter failure rate was four times the industry standard. PPL Electric also provided actual meter failure rates from 2007 through 2013. (PPL Electric Exh. No. 1, p. 11.) OSBA raised the argument in its direct testimony that PPL Electric should delay deployment. If OSBA wanted information regarding additional PLC meter costs that would be incurred by PPL Electric as a result of OSBA's proposed delay in deployment, the OSBA should have asked for that information in discovery. The OSBA had over 3 months to ask discovery between the time that PPL Electric filed its SMP and when OSBA's direct testimony was due and failed to ask for this information. As explained by Ms. Ogozaly,

It is essential to note that no party in this proceeding, including OSBA, requested in discovery that PPL Electric quantify savings associated with not having to replace failing first generation meters. PPL Electric responded to all discovery questions by parties and no party argued that PPL Electric's responses were insufficient.

(PPL Electric St. No. 4-RJ, p. 7.)

The OSBA raised its delay argument in Direct Testimony, and the Company responded in Rebuttal, in part, by explaining that delay would significantly increase costs for replacing failing PLC meters during the delay period. The Company's response in Rebuttal was appropriate.

4. A Net Present Value Analysis Fails To Consider Many Smart Meter Benefits.

In this proceeding, the Company presented an analysis demonstrating that customers would pay approximately \$38.4 million more for a 2-year delay in implementation due to estimated inflation costs and additional unnecessary investment in PLC meters due to failure. The incremental cost of a four-year delay is estimated to be \$85.6 million. (PPL Electric St. No. 4-R, p. 8; PPL Electric St. No. 4-RJ, p. 8.)

OSBA criticizes the Company's analysis for failing to consider the net present value ("NPV") of delaying implementation. (OSBA MB, p. 19.) In its Main Brief, the Company explained that a NPV analysis should not be relied upon given the Company's business need to replace its first generation PLC metering system before it reaches the end of its useful life. The Company has a statutory obligation to provide reasonable service to customers, and the OSBA's NPV analysis fails to consider the impacts on customers and the increased costs to address customer service issues. (PPL Electric St. No. 4-RJ, p. 11.) The Company also explained that an NPV analysis is incomplete because it fails to consider many benefits associated with implementing smart meter technology. (PPL Electric IB, pp. 25-28.)

5. The OCA's Proposal To Delay Deployment Should Also Be Denied.

OCA argues that full smart meter deployment must be completed by 2025. The OCA further argues that the Company should evaluate its options over the next 2 to 5 years to extend the life of its current AMI system "while working toward a more gradual, cost-effective transition to a more advanced AMI system. OCA also argues that PPL Electric is not similarly situated to other EDCs in Pennsylvania because other EDCs did not have similar levels of AMI meters and infrastructure. (OCA MB, pp. 24-30.)

The OCA's request to delay deployment should be denied. As explained in Section VI(D)(2) above, the Commission ordered the FirstEnergy Companies not to wait until 2022, much less 2025, to deploy smart meters. *Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, and Pennsylvania Power Company for Approval of Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123950, Order entered June 9, 2010, p. 14. In addition, as explained in Section VI(B) above, there is no cost-effective way to delay deployment due to the need to replace failing first generation PLC meters. In addition, PPL Electric is similar to both Duquesne Light and PECO in that all three companies had installed AMI systems that eliminated physical meter reading operations prior to implementing Act 129 smart meter technology. For these reasons and the reasons explained in the Company's Initial Brief, the Company's proposed deployment schedule should be adopted.

E. COST SAVINGS/QUANTIFICATION OF BENEFITS

1. Introduction

PPL Electric presented its arguments regarding how to reflect cost savings related to implementation of the SMP on pages 28-34 of its Initial Brief and will attempt to avoid unnecessary repetition herein. As an initial matter, it should be clarified that PPL Electric is not disputing that customers should receive any cost savings associated with implementation of the SMP. However, PPL Electric has already implemented a first generation AMI system and has reflected associated cost savings to customers in base rates. The installation of a second generation system will preserve these benefits which are fully reflected in base rates but will provide only limited incremental savings. In addition, there will be costs associated with attempting to quantify additional savings. The Commission has previously approved reflecting savings from PPL Electric's first generation AMI system in base rates, and the Company

proposes to continue to reflect any limited savings associated with implementing its SMP in base rates.

2. OCA's Proposal To Require The Company To Quantify Savings And Reflect Them In The SMR Should Be Denied.

OCA argues that the Company must reflect savings in the SMR if it is collecting costs in the SMR. (OCA MB, p. 32.) As explained in the Company's Initial Brief, Act 129 does not require savings to be reflected in the SMR, it only requires that customers receive savings associated with implementing smart meter technology. The Company proposes to reflect such savings through base rates. This is appropriate for PPL Electric because the Commission has previously approved reflecting savings from PPL Electric's first generation SMP in base rates. This Commission-approved methodology should not be changed in this proceeding.

In addition, it will be expensive and extremely difficult, if not impossible, to accurately calculate any incremental savings and then to separate them from existing savings already reflected in base rates. Smart meter savings should either be reflected in base rates or in the SMR, but not both. The OCA has provided no legitimate basis to adopt a different and fundamentally inconsistent approach for PPL Electric's second generation SMP, particularly given the small level of incremental savings and the difficulty in calculating and separating incremental savings from existing savings already built into base rates.

The OCA cites to the FirstEnergy Companies proceeding as support for its argument that PPL Electric should establish baselines for savings and reflect such savings in its SMR. As explained in the Company's Initial Brief, PPL Electric is in a much different position than the FirstEnergy Companies with respect to AMI savings. The FirstEnergy Companies are implementing a first generation AMI system, and PPL Electric is implementing a second generation AMI system. The FirstEnergy Companies, therefore, have not already reflected AMI

savings to customers. It is therefore appropriate for the FirstEnergy Companies to establish baselines for cost savings and to reflect such savings in their SMR. In addition, the FirstEnergy Companies have not already reflected smart meter savings in base rates. Therefore, all savings will be reflected in the SMR for the FirstEnergy Companies. However, since PPL Electric has already reflected savings from implementing its first generation AMI system to customers in base rates, it is reasonable for PPL Electric to continue to do so. This will avoid significant complexities associated with attempting to calculate incremental savings that are not already reflected in base rates. This will also avoid the additional costs that PPL Electric would incur to track what are estimated to be relatively low levels of savings and also avoid costs of hiring an independent consultant to report savings as requested by OCA. (OCA MB, p. 34.)

3. OSBA's SMR Crediting Proposals Should Be Denied.

In its Main Brief, OSBA sets forth various proposals that would require PPL Electric to credit the SMR with NPV costs and/or deny PPL Electric recovery of reasonably incurred costs. These arguments are addressed below and should be denied because they are unsupported by the evidence and violate sound ratemaking principles.

As support for its proposals, the OSBA argues that “the only credible justification for the acceleration is the avoided costs associated with the failure of the first generation of meters.” (OSBA MB, p. 24.) This argument is fundamentally flawed. As explained in Section VI(D)(2) above, PPL Electric is not “accelerating” SMP deployment. The Company is following Commission guidance and has proposed a SMP deployment schedule that is consistent with the schedules adopted for the other EDCs in Pennsylvania.

OSBA also argues that the Company intends to “double charge” ratepayers for meter costs. (OSBA MB, p. 24.) OSBA's argument appears to be based on the proposition that PPL Electric will recover the costs of its new RF mesh system in the SMP and continue to recover the

costs of the PLC system in base rates. OSBA's argument is incorrect because this is not double charging ratepayers for the same meter costs. Rather, PPL Electric is recovering costs for its new RF mesh meters and will continue to recover unrecovered costs for its existing PLC meter system. PPL Electric is entitled to recover all of these costs.

With respect to the PLC meter costs, OSBA argues that "given the 15-year depreciable life of these assets, the costs associated with the original meters will fall to zero between 2017 and 2019." (OSBA MB, p. 24.) This argument is directly contrary to unrefuted record evidence in this proceeding. In direct testimony, Ms. Johnson stated as follows:

PPL Electric's current meters are not fully depreciated and will not be fully depreciated by the end of the new meter deployment period. The SMR as proposed does not include an adjustment for recovery of the remaining investment in the Company's existing meter assets. PPL Electric proposes to continue recovering depreciation expense on its existing meter assets through distribution base rates using the current meter life. When the Company submits its next base rate case, it will propose to accelerate the period over which it will recover the remaining investment in its existing meters (i.e., the balance as of December 31 of the year before new distribution base rates would take effect) over a period that coincides with the completion of the new meter deployment period through its territory.

(PPL Electric St. No. 6, pp. 9-10.)

In addition, Ms. Ogozaly explained that the unrecovered meter investment as of June 30, 2014 was \$110.7 million. (PPL Electric St. No. 4-R, p. 9.) This unrecovered meter investment will not be recovered by 2019, and there is no evidence in the record to suggest that it will be recovered by then. OSBA's argument that PPL Electric's PLC meter investment will be fully recovered by 2019 is factually incorrect. Moreover, all EDCs in Pennsylvania have been permitted to recover the costs for their prior generation meters. (*See e.g. Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company For Approval of Their Smart Meter Deployment Plan, Docket*

Nos. M-2013-2341990 et al., Order entered March 6, 2014, Ordering paragraph No. 20, p. 48; *Petition of PECO Energy Company for Approval of Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123944, Order entered May 6, 2010, p. 16.)

OSBA also states that “the Company has done little to protect ratepayers with respect to the costs associated with failing meters.” (OSBA MB, p. 25.) As explained in Section VI(C) above, the Company’s PLC meters are failing due to age. OSBA’s argument that PPL Electric has not provided “reasonable protection to ratepayers regarding premature meter failure” is incorrect and is unsupported by the evidence.

To remedy its unsupported allegation that PPL Electric will be double charging costs, OSBA argues that the Company should credit the SMR with NPV costs. (OSBA MB, p. 26.)

OSBA argues as follows:

The essence of this approach is that if imposing some \$123 million in additional present value costs through the smart meter charge is justified by base rate savings, then PPL is pocketing at least \$123 million in reduced base rate costs.

(OSBA MB, p. 26.)

This argument is severely flawed. The \$123 million in NPV costs is based on the OSBA’s NPV analysis, which is highly subjective based upon its inputs and fails to reflect many benefits of implementing smart meter technology. The \$123 million has absolutely no correlation to reduced base rates costs that will be achieved by PPL Electric. (See PPL Electric’s IB, pp. 31 - 34 for a further explanation of why it is unreasonable to credit NPV costs to the SMR.)

Apparently recognizing the weakness of its argument to credit NPV costs to the SMR, OSBA proposes that the Commission require PPL Electric to develop a mechanism that will prevent ratepayers from paying for new smart meters in the Smart Meter Rider while continuing

to pay the Company for PLC smart meters in base rates for which PPL Electric is no longer incurring costs. This argument should be denied for several reasons. First, the Company will not fully recover its existing PLC meter costs by 2019. Second, the Company has already proposed in this proceeding to revise its meter depreciation rates in its next base rate proceeding to make the cost recovery of the existing meter assets coincide with the implementation of the new RF mesh meters. (PPL Electric St. No. 6, pp. 9 – 10.) Parties will be able to address issues related to unrecovered PLC meter costs in that base rate proceeding.

4. CAUSE-PA’s Proposal To Deny The Company’s Petition Pending Further Cost/Benefit Analysis Should Be Denied.

CAUSE-PA argues that the Commission should adopt OCA’s recommendation regarding quantification of savings and also argues that the Company should account for the cost of that technology to customers. CAUSE-PA further argues that the Commission should deny PPL Electric’s SMP pending a more complete accounting of costs and savings. (CAUSE-PA MB, pp. 15-16.)

CAUSE-PA’s arguments regarding quantification of savings are addressed in Section VI(E) above, and on pages 28 – 34 of the Company’s Initial Brief. CAUSE-PA’s arguments regarding quantifying costs for HAN technology are addressed in Section VI(A)(3) above. For the reasons explained therein, CAUSE-PA’s arguments to deny the Company’s SMP should be denied.

F. SMART METER CHARGE ISSUES

1. Calculation of the Smart Meter Charge.

This issue was addressed on page 35 of PPL Electric’s Initial Brief. There is no controversy among the parties regarding this issue.

2. Proposed Modifications To The Small C&I Smart Meter Charge

In this proceeding, PPL Electric proposed to continue to have separate smart meter charges by customer class, i.e. Residential, Small C&I and Large C&I classes. This is the same methodology that PPL Electric uses for its current smart meter charge and for its other 1307 automatic adjustment clauses. (PPL Electric St. No. 6-R, p. 2.)

In its Main Brief, the OSBA argues that Small C&I customers vary substantially by size and that they have meter costs that vary between \$135 and \$399. Therefore, OSBA argues that the Company should calculate separate smart meter rates for GS-1 and GS-3 customers. (OSBA MB, p. 28.)

The Company addresses this issue on pages 35-37 of its Initial Brief. As explained therein, OSBA is overstating its cost subsidization concerns. The vast majority of GS-3 meters cost either \$171 or \$181 and only a small percentage of GS-3 meters cost \$399. If the \$399 meters for the largest Small C&I customers is removed from the cost analysis, the remaining customers, on average, would only pay \$2 less, over a 15-year period, than they would pay under the Company's proposal. (PPL Electric St. No. 6-RJ, p. 4.)

The OSBA's alleged cost subsidy concerns do not warrant the cost or effort that would be required to split the Small C&I SMP charge into separate rate schedules. Moreover, as explained above, this would be inconsistent with all of PPL Electric's other 1307 automatic adjustment clauses.

G. COMMUNICATION STRATEGY

In its Main Brief, the OCA argues that the Company should work with stakeholders to develop a comprehensive smart meter communications plan and file its communications plan with the Commission for approval. (OCA MB, pp. 39-40.) In this proceeding the Company has agreed to work with stakeholders to develop a comprehensive communications plan and to file

the plan with the Commission. (PPL Electric IB, pp. 37 – 38.) PPL Electric does not believe that Commission approval of the communications plan is required, but leaves that issue to the Commission’s discretion.

In its Main Brief, the OCA also expresses concerns regarding statements that the Company may make to customers regarding outage management benefits. OCA argues that smart meters will allow the Company to more precisely measure the duration of outages, but will not decrease actual outage duration. (OCA MB, p. 41.) OCA further states that the Company’s communications should ensure that customers do not interpret outage management measures to mean that customers will have fewer and shorter outages.

As an initial matter, PPL Electric notes that the pilot programs relied on by the OCA for its analysis did not include last gasp technology or the ability to provide power restoration messages. Therefore, PPL Electric believes that OCA is minimizing the outage management benefits of implementing a RF mesh smart meter system. (See PPL Electric St. No. 2-RJ, pp. 3-4.) Mr. Glenwright testified that the ability of AMI RF mesh systems to deliver proactive notifications (last gasp) and power restoration messages, coupled with pinging meters for power status and integration with the outage management system will improve the outage management process. However, the Company agrees that outage management benefits should be presented to customers in a clear manner that is easy to understand and further agrees to review messages relating to outage frequency and duration to ensure that they are clear and do not overstate outage management benefits.

H. CYBERSECURITY ISSUES

In its Main Brief, the OSBA argues that the Company should delay smart meter implementation so that it can observe the level of success other EDCs have with smart meter platforms. OSBA argues:

That delay may allow PPL to benefit from new deployments in cybersecurity that will benefit not only the Company itself, but also PPL's ratepayers.

(OSBA MB, p. 30.)

OSBA's argument that PPL Electric should delay implementation to observe other EDCs' cybersecurity measures should be denied for several reasons. First, PPL Electric has proposed a comprehensive cybersecurity plan that has not been challenged by any party in this proceeding. Second, as explained by Mr. Simendinger, the new RF mesh system will provide additional security protections over PPL Electric's PLC metering system. Mr. Simendinger explained as follows:

RF mesh meters provide enhanced security features, including but not limited to the use of industry standard encryption, use of security certificates for device authentication, proprietary protocols that reduce exposure to threats posed by use of common IP-based protocols, anti-tampering features that thwart and alert on unauthorized attempts to manipulate device configurations, and embedded security monitoring features that can be integrated with security and incident event monitoring (SIEM) systems in place at PPL Electric to detect unauthorized or unusual network traffic.

(PPL Electric St. No. 5-RJ, p. 4.)

Third, PPL Electric already consults with other EDCs in Pennsylvania regarding cybersecurity issues and also participates as a utility partner on cybersecurity issues. (PPL Electric St. No. 5-R, p. 7.) Fourth, there is no evidence in this proceeding that delaying implementation of a more advanced and secure RF Mesh metering system will create cybersecurity benefits. To the contrary, it will provide additional protections and better allow the Company to respond to cybersecurity issues as they arise.

In its Main Brief, the OSBA notes that there have been many recent hacks of computer systems and emphasizes the importance of having comprehensive cybersecurity measures. (OSBA MB, pp. 2, 29-30.) OSBA's argument that the Company should delay its RF mesh

system, which has advanced cybersecurity technology over the PLC system, is contrary to its concerns about ensuring the security of the Company's systems.

I. DATA PRIVACY ISSUES

1. PPL Electric Should Not Be Required To Conduct A Collaborative Regarding Data Privacy Issues.

OCA and CAUSE-PA argue that the Company should be required to conduct a collaborative with interested stakeholders regarding data privacy issues and develop a stand-alone customer privacy policy. (OCA MB, p. 48; CAUSE-PA MB, pp. 19-20.) The OCA and CAUSE-PA recommendations are unnecessary, would increase costs for customers and would unreasonably interfere in the management of the Company.

PPL Electric takes extensive measures to protect the privacy of customers' data. Mr. Simendinger explained as follows:

As outlined in rebuttal and rejoinder responses, we believe the SMIP outlines the necessary high level components related to data privacy, albeit on the surface it may appear as merely through the lens of cybersecurity. In its plan, PPL Electric has cited its proposed use of a methodology leveraging established security and data privacy standards, including performing a Privacy Impact Assessment (PIA). Conducting a PIA addresses data privacy concerns, and the "Guidelines for Smart Grid Cybersecurity: Vol. 2, Privacy and the Smart Grid" illustrate this data privacy focus of the plan to review the findings and incorporate recommendations of these guidelines, categorized within areas titled: Management and Accountability, Notice and Purpose, Choice and Consent, Collection and Scope, Use and Retention, Individual Access, Disclosure and Limiting Use, Security and Safeguards, Accuracy and Quality, Openness, Monitoring, and Challenging Compliance. PPL Electric's customer service employees are engaged as part of the Smart Meter project team to address data privacy matters among many other aspects of the project's scope, working with cybersecurity and engineering resources, to keep customer data private and secure.

(PPL Electric St. No. 5-RJ, pp. 3-4.)

PPL Electric also explained that it follows all Commission regulations with respect to data privacy and that its employees are committed to protecting customers' smart meter data in the future, just as they do today. (PPL Electric St. No. 5-RJ, p. 2.)

Holding a collaborative regarding data privacy issues is unnecessary and would increase smart meter costs for customers.

2. Supplier Portal Issues

a. PPL Electric Follows All Commission Guidance Related To The Company's Supplier Portal.

PPL Electric has developed a Supplier Portal that allows EGSs and third parties to access customer data. EGSs and third parties are required to have appropriate customer authorization to access the customer's data and the burden is on the EGS and/or third party to ensure that they have the appropriate authority. PPL Electric maintains logs of who accesses customer data and will provide an individual customer's log to the customer upon request.

Both PPLICA and CAUSE-PA argue that the Commission should revise its policies regarding EGS and third-party access to the Supplier Portal and create greater restrictions on EGSs and third parties with respect to accessing customer data. (PPLICA MB, p. 9; CAUSE-PA MB, pp. 20-21.) PPL Electric follows applicable Commission guidance with respect to its Supplier Portal. The Commission's policies with respect to Supplier Portals apply to all utilities, not just PPL Electric. Therefore, the Company does not believe that it is appropriate to change general Commission policies that apply to all EDCs in PPL Electric's individual smart meter proceeding. If the Commission seeks to change its general policy regarding Supplier Portals, this should be done in a generic proceeding where all utilities have the opportunity to comment.

b. PPL Electric Should Not Be Required To Develop Further Protocols For Responding To Customer Requests For Supplier Portal Event Logs.

In its Main Brief, PPLICA requests that the Commission direct PPL Electric to develop specific protocols setting forth the limitations on its ability to respond to customer requests for event logs. PPLICA further states that absent compelling reasons, customer requests for log information should be fulfilled without undue delay. (PPLICA MB, p. 8.)

PPL Electric has already developed procedures for providing customers with log event information from the customer portal and, therefore, PPLICA's request should be denied. At the hearing, Mr. Glenwright explained that the Company would attempt to respond to each request within 10 days. (Tr. 60.) The Company also explained in this proceeding that it would provide the information to customers absent unusual circumstances. (PPLICA Cross Ex. Exh. No. 1, p. 8; PPLICA Cross Ex. Exh. No. 2, p. 2.) In addition, Mr. Glenwright explained that to date, the Company had not received any requests for log information from the supplier portal. (Tr. 59.)

The Company has developed reasonable procedures for responding to customer requests for event logs. The Company cannot develop more specific procedures at this time because it has not had customer requests for event logs and cannot predict all circumstances that may arise. If there are any issues related to this matter in the future, they can be addressed on a case-by-case basis.

J. REMOTE DISCONNECT, SERVICE LIMITING AND PRE-PAY METERING ISSUES

Both OCA and CAUSE-PA argue that the Company should be required to obtain Commission approval of any program that involves remote disconnection for involuntary termination, service limiting or pre-pay metering even if the Company is able to follow all applicable Commission regulations when implementing the program or programs. (OCA MB,

pp. 49-53; CAUSE-PA MB, pp. 23-25.) PPL Electric addresses this issue on pages 40-41 of its Initial Brief. As explained therein, PPL Electric should not be required to file for approval of a program that meets applicable Commission regulations.

OCA and CAUSE-PA argue that people may disagree whether a particular practice is compliant with the Commission's regulations or not. This is not a sufficient reason to adopt their proposal. If there is a disagreement over whether a regulation is being violated, a party can always file a complaint with the Commission.

K. MISCELLANEOUS ISSUES

PPLICA submitted no testimony in this proceeding. Despite the lack of testimony to explain its positions, PPLICA argues in its Main Brief that there is uncertainty regarding the relationship between unaccounted for energy ("UFE") and line losses calculated under the Company's supplier tariff. (PPLICA MB, p. 10.) PPLICA argues that "The record in this proceeding reflects uncertainty regarding the necessity for PPL to update the line loss factors published in its supplier tariff to reflect anticipated reductions to the Company's UFE rates." (PPLICA MB, p. 11.) PPLICA recommends that the Commission direct PPL Electric to submit a compliance filing itemizing the various line loss components. (PPLICA MB, p. 12.)

As explained below, PPL Electric disagrees that the record is unclear on this issue. However, to the extent the record is unclear, it is because PPLICA failed to provide testimony on this issue, thereby denying PPL Electric a reasonable opportunity to respond on the record. In addition, if PPLICA wanted a detailed itemization of line loss factors, it should have asked for it in discovery, not waited until its Main Brief when the record is closed. PPLICA had a full and fair opportunity to litigate this issue and did not properly raise this issue in testimony in this proceeding. Therefore, PPLICA's request for PPL Electric to provide information in a

compliance filing that could have been provided in discovery and addressed in testimony should be denied.

As to the substantive merits of PPLICA's argument, the record is clear that line loss factors do not include UFE. At the hearing, Ms. Johnson stated several times that line loss factors are different than UFE. Ms. Johnson stated as follows:

As I mentioned earlier, the losses that are referred to here are really system losses, which are different than unaccounted for energy.

(Tr. 137.)

Ms. Johnson also stated:

... like I said, the system losses are not -- have no relationship to the meter data. I mean, the customer -- the system losses are really due to losses on the -- on the infrastructure, getting the energy, really, from a generating facility down to the end use customer. So, the type of meter that's installed at the end use customer is not going to indicate -- it's going to indicate whether, you know, or as Mr. Glenwright mentioned, in the case of theft, which would be unaccounted-for energy, as we go out and look at that meter and put in a new meter, then we'll have new meter data, but the type of meter that would exist on, say, my residence, is not going to in any way indicate a change or update the system for losses that happened before my meter, it would only measure losses that could be occurring after my meter, ...

(Tr. 138.)

Moreover, in discovery, PPL Electric indicated that to the extent unaccounted for energy is reduced, it is inherently incorporated in sales used for distribution rates in base rate proceedings and riders when the rates are recalculated. (PPLICA Cross Examination Exh. No. 3, p. 2.)

Contrary to PPLICA's assertions in its Main Brief, the record is clear in this proceeding that line loss factors do not include UFE. PPL Electric should not be required to provide a

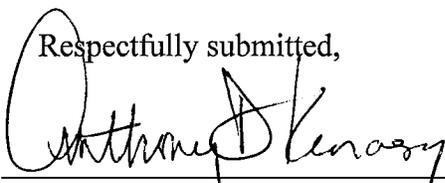
compliance filing on this issue, especially where the information request raised by PPLICA should have been raised in its testimony, or at a minimum asked for in discovery.

VII. CONCLUSION

For the foregoing reasons, PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge Susan D. Colwell recommend approval of and that the Pennsylvania Public Utility Commission approve the Company's smart meter plan without modification, including the Company's proposed deployment schedule and the proposal to reflect savings to customers through base rates.

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