**PENNSYLVANIA**

**PUBLIC UTILITY COMMISSION**

**Harrisburg, PA 17105-3265**

Public Meeting held January 9, 2014

Commissioners Present:

Robert F. Powelson, Chairman

John F. Coleman, Jr., Vice Chairman

James H. Cawley

Pamela A. Witmer

Gladys M. Brown

Petition of Duquesne Light Company for M-2009-2123948

Approval of Its Final Smart Meter

Procurement and Installation Plan

**FINAL ORDER**

**BY THE COMMISSION:**

On May 6, 2013, the Pennsylvania Public Utility Commission (Commission) entered an Opinion and Order (May 6 Order) granting and modifying the Petition of Duquesne Light Company (Duquesne or the Company) for Approval of its Final Smart Meter Procurement and Installation Plan (Final SMP) and granting and modifying the Joint Petition for Approval of Full Settlement of All Issues (Joint Petition) filed on December 7, 2012, by Duquesne and the Office of Consumer Advocate (OCA). In the May 6 Order, the Commission directed Duquesne to make a compliance filing within ninety (90) days of the date of entry of the May 6 Order, specifying its proposed changes to settlements and profile processes[[1]](#footnote-1), and providing data supporting whether or not inclusion of the voltage monitoring and communication of outages and restorations capabilities are cost effective.

Other interested Parties were directed to file comments on Duquesne’s compliance filing within one hundred and twenty (120) days of the date of entry of the May 6 Order. On August 2, 2013, Duquesne filed their compliance filing. No parties filed comments to Duquesne’s compliance filing.

**I. Duquesne’s Compliance Filing**

Duquesne’s compliance filing proposes to explain its settlements and profile processes that will use hourly data available through the installation of smart meters to directly assign energy costs to each customer on the Advanced Metering Infrastructure (AMI) system based on their actual hourly usage. This would enable customers with smart meters to participate in time-of-use (TOU) and real-time-pricing (RTP) programs. Duquesne’s filing also provides the cost-benefit data and further reasoning behind Duquesne’s decision to move forward with a plan to incorporate outage communication, restoration and voltage monitoring capabilities. Duquesne requests that the Commission:

1. Approve the compliance filing and attached appendices as compliant with the May 6 Order; and
2. Authorize Duquesne to begin Phase 1 – Strategic Development of its Outage Communication, Restoration and Voltage Monitoring Plan and data collection; and
3. Authorize Duquesne Light to recover its interim and actual costs for the Phase 1 study and data collection through the smart meter charge, estimated at $1-$1.5 million.

**A. Settlement, Time-of-Use (TOU) Rates and Real-Time-Pricing (RTP)**

Duquesne will fully implement TOU rates and RTP once a customer is connected to a Smart Meter and AMI data is available. Currently, Duquesne uses an advanced meter reading (AMR) system to calculate PJM settlement. Duquesne will continue to use the same PJM settlement process currently in effect and in combination with Smart Meter deployment until all upgrades are completed. Currently, for large commercial and industrial customers, which account for about 48% of load demand, PJM settlement is determined by using hourly data from installed interval meters/MV-90 system. Then for the balance of commercial, industrial, and all residential customers not having interval meters, a daily meter reading is used by the AMR system, along with rate class and temperature profiles, to allocate daily consumption data to each hour of the day. However, once a customer is connected to a Smart Meter and the AMI System is functional, each customer’s actual energy usage would be calculated hourly and would be able to fully participate in TOU and RTP programs.

**B. Potential Voltage and Transformer Monitoring, Outage Communications and Restoration Capabilities**

Duquesne submitted to the Commission an action plan to utilize AMI to possibly improve their capability to monitor and control system voltage and individual transformers, and to manage power outage restoration/communications. The AMI upgrade would allow improved capability to monitor and control voltage and transformers to improve power quality and increase power distribution efficiency especially during power transients and peak power demand periods.

The AMI system offers many opportunities to monitor and control the distribution grid, but Duquesne selected to start evaluating the following three areas; Volt/VAR optimization, outage notification, and transformer loading:

1. Voltage/VAR optimization can reduce line loss inefficiencies by optimizing reactive power flow and improving the PF (Power Factor) of the electrical distribution system thereby decreasing the amount of current flow necessary to meet customer load demand.
2. Outage notification using AMI data together with a compatible Outage Management System (OMS) will provide better diagnostics and control of abnormal conditions during power outages. This would allow power outage restoration to be completed faster than before and would increase reliability of the electrical distribution system. The system would provide proactive communications with customers affected by a power disruption.
3. Transformer load monitoring capability can minimize outages caused by overloading transformers during peak demand periods. Immediate action can be taken to reduce load on transformer or perform maintenance on the unit.

In order to benefit from these additional AMI features, Duquesne proposed to execute a multi-year and multi-million dollar investment project to install a new OMS that is capable of sharing data with AMI, and to perform electrical modeling of the distribution system. Because of the significant financial investment required to complete this project, Duquesne is proposing to study the technology and cost benefit issues in greater detail as described in section D, below.

**C. Cost-Benefit Analysis and Implementation Roadmap**

Duquesne had solicited proposals from two outside consultants to independently evaluate the implementation of the AMI system upgrades described above. The Consultants’ preliminary projected AMI upgrade cost estimates range between $22-44 million. The associated cost saving estimates, over a 20 year period, range between $120-250 million. These costs and cost savings are preliminary until a fully detailed study of the Duquesne’s distribution system is completed.

Duquesne stated, as demonstrated during super storm Sandy, customers expect more communications and faster restoration. Therefore, within reason, Duquesne believes it must invest in state of the art technologies since there are intangible benefits such as customer satisfaction in continuing to provide safe and reliable power, as well as projected monetary savings noted by the consultants.

**D. Implementation Plan**

Duquesne expects to develop and execute the potential outage communication, restoration, and voltage monitoring capability plan in three phases:

Phase I (June 2014 to June 2015) – Duquesne will perform a detailed study of distribution operation processes and technology, data collection for electric distribution modeling, and issue a more specific scope of work/roadmap which will include more refined cost-benefit analyses. Duquesne expects the Phase I study to cost up to $1.5 million and requests this cost be recovered through the smart meter charge. After the Phase I study is completed by June 2015, Duquesne will petition the Commission to execute Phase II (starting June 2015 with expected completion June 2018), then Phase III (starting January 2018 with expected completion December 2020).

Phase II (June 2015 to June 2018) – Expected to focus on advanced outage capabilities.

Phase III (January 2018 to December 2020) – Expected to focus on distribution monitoring and control applications.

**E. Phase I Cost Recovery**

Duquesne has requested Commission authorization to recover its interim and actual costs for the Phase 1 study and data collection through the smart meter charge, estimated at $1-$1.5 million. As Duquesne has demonstrated, at least preliminarily, the voltage monitoring and communication of outages and restoration capabilities are cost-effective. Therefore, Duquesne may recover the costs to implement these capabilities through their reconcilable automatic adjustment clause under Section 1307. 66 Pa.C.S. §2807(f)(7). The costs associated with the Phase 1 study are administrative costs as outlined in the Commission’s Smart Meter Procurement and Installation Implementation Order[[2]](#footnote-2). Therefore, there is no need for the Commission to grant specific authorization for recovery of the Phase 1 study costs.

Duquesne plans to petition the Commission for approval to implement the specific voltage monitoring and communication of outages and restoration capabilities consistent with the information gathered during Phase I. Duquesne’s post-Phase I petition should provide more detailed information on the incremental costs and any associated potential operational and maintenance cost savings of these capabilities. As Duquesne notes, the cost and benefit data in their compliance filing are broad and preliminary and will become further refined as a more detailed study is completed.

**II. Conclusion**

The Commission finds that Duquesne’s compliance filing complies with our directives. Consequently, consistent with our discussion above, we shall approve the compliance filing; **THEREFORE,**

**IT IS ORDERED**:

1. That the compliance filing of Duquesne Light Company for its Final Smart Meter Plan is approved.

2. That Duquesne Light Company is authorized to begin Phase I of its Outage Communication, Restoration and Voltage Monitoring Plan, including data collection required for the creation of an electrical model.

3. That any Commission directives included in the discussion of this Order but not reiterated in Ordering Paragraphs one and two shall have the full force of an Ordering Paragraph.

4. That Duquesne Light Company’s post-Phase I petition shall include information on the incremental costs and any associated potential operational and maintenance cost savings for the Voltage Monitoring and Communication of Outages and Restorations capabilities.

5. That a copy of Duquesne Light Company’s post-Phase I petition shall be served upon the Reliability and Emergency Preparedness Section of the Bureau of Technical Utility Services.

 **BY THE COMMISSION,**

Rosemary Chiavetta

Secretary

(SEAL)

ORDER ADOPTED: January 9, 2014

ORDER ENTERED: January 9, 2014

1. To fully enable the use of time-of-use (TOU) rates and real time pricing (RTP) [↑](#footnote-ref-1)
2. Docket No. M‑2009‑2092655. [↑](#footnote-ref-2)