

Smart Grid Advanced Metering Annual Implementation Progress Report

APPENDIX A – REPORTS

I. INTRODUCTION

Pursuant to the June 2012 Order, ComEd was directed to submit information with its AIPR concerning any updates since submission of the AMI Plan to standards identified by the National Institute of Standards and Technology (“NIST”), including standards adopted by NIST’s Smart Grid Interoperability Panel (“SGIP”), and how ComEd is addressing them.¹⁴ In addition, in that same June 2012 Order, the Commission also directed ComEd to address in its 2013 AIPR: (1) if a Time-of-Use (“TOU”) tariff will be proposed and the results of the dialogue with stakeholders regarding same; and (2) the development of a methodology to define and identify vulnerable customers and issues related to tracking information for vulnerable customers. ComEd did so, and in the order entered approving ComEd’s 2013 AIPR, the Commission decided that any further discussion of these two issues was outside the scope of an AIPR proceeding.¹⁵ Thus, while TOU and vulnerable customers are not issues in any proceeding that may be opened by the Commission to review ComEd’s 2014 AIPR, ComEd does herein present, for informational purposes only, a discussion of its further efforts in 2013 to address these two issues.

Similarly, in the June 2012 Order, the Commission also directed ComEd to work with interested parties on the request for a map showing where distributed generation (“DG”) would be good or bad. While the Commission did not specifically direct ComEd to report on the progress of the DG mapping request with its AIPR and specifically indicated that any issues regarding DG mapping should be brought before the Commission in a separate filing or rulemaking, ComEd is reporting on the status of this effort for the convenience of the Commission and all interested parties.

Lastly, in the Order the Commission entered in ComEd’s recent energy efficiency three-year plan, the Commission ordered ComEd to propose a Voltage Optimization (“VO”) study and to include it in ComEd’s AMI Plan.¹⁶ In compliance with that Order, a discussion of the proposed study is included in this Appendix.

A discussion of the status of each item described above is provided below.

II. UPDATED NIST INTEROPERABILITY STANDARDS

As noted above, in the June 2012 Order the Commission directed ComEd to report on any updates to applicable NIST standards and explain how it is addressing any such updates.¹⁷ The applicable NIST standards noted in the Revised AMI Plan are regularly reviewed by the IT team

¹⁴ June 2012 Order at 25.

¹⁵ 2013 AIPR Order at 10 and 15.

¹⁶ Order of January 28, 2014 in Docket No. 13-0495 at 95.

¹⁷ June 2012 Order, at 25.

at ComEd for completeness and accuracy. Each standard is studied to identify any updates or changes, and to determine whether it has been superseded by newer or more appropriate standards.

As a result of the IT team's review in 2013, the IT team determined that the standards noted in the Revised AMI Plan continue to be applicable, have not been updated or superseded, and are being tracked and monitored by ComEd appropriately. This includes NIST standards related to customer data and privacy.¹⁸

Additionally, standard IT security management activities are completed by the IT team as a component of the required support of AMI systems. Security management activities are completed to align with ComEd policies and industry standards, and include activities such as deploying security system packages to allow for appropriate security and vulnerability monitoring, ensuring that deployed servers adhere to password and system control procedures, performing periodic server fixes and security updates, and performing vulnerability scanning as well as subsequent remediation steps to rectify any defects or findings.

III. TIME OF USE RATE

A. 2013 AIPR

The June 2012 Order directed ComEd to work with the SGAC and other stakeholders to develop a proposal regarding increasing the availability and participation in dynamic pricing programs offered by either ComEd or RES.¹⁹ This directive in the Commission's Order was in response to proposals made during the AMI proceeding to require ComEd to offer an optional TOU supply rate. ComEd agreed during the proceeding to initiate a dialogue to consider such a new supply service.

As reported in ComEd's 2013 AIPR in Docket No. 13-0285, ComEd met with SGAC and other stakeholders to discuss the development of TOU within Illinois' competitive market and reported the results of its meetings with stakeholders.²⁰ As a result of these meetings, ComEd concluded that a utility-offered TOU rate would be a potential disruption to the competitive market, and committed to continue to work with stakeholders on these issues. The Commission agreed with

¹⁸ NIST has proposed revisions to two standards: NISTIR 7761 Guidelines for Assessing Wireless Standards for Smart Grid, and NISTIR 7628 Guidelines for Smart Grid Cyber Security, which are expected to be finalized in 2014. If so, we shall report on them in next year's AIPR.

¹⁹ June AMI Order at 44-45.

²⁰ 2013 AIPR, App. A at 2-4.

ComEd's conclusion and in its 2013 AIPR Order declined to require ComEd to offer a TOU rate.²¹

B. Developments Subsequent to the 2013 AIPR Order

In Docket No. 12-0484, the Commission investigated ComEd's Petition to seek approval of tariffs implementing ComEd's PTS program, pursuant to Section 16-108.6(g) of the PUA. In its PTS Order, the Commission directed Staff to hold workshops with interested parties in order to address certain issues that arose during the investigation of ComEd's PTS tariff. Between April and November 2013, Staff hosted nine workshops at the Commission that were attended by utilities, consumer groups, ARES, and other interested stakeholders. In addition to the items the Commission directed the parties to address, the workshops covered AMI-related topics, including the release of customer-specific information by electric utilities and the offering of TOU and other dynamic pricing products to enable the development of the competitive retail market.

1. Release of Customer-Specific Information by Electric Utilities

Several of the initial issues discussed at the workshops revolved around the electric utilities releasing customer-specific information to third parties. While one of those issues, i.e., identifying customers participating in ComEd's PTS program, had been raised in Docket No. 12-0484, other issues were identified in the workshop discussions that focused on how Sections 16-122 and 16-108.6 of the PUA impacted a utility's ability to release customer-specific information to third parties.

Recognizing that these issues would not be resolved in the workshops, the Commission's Office of Retail Market Development ("ORMD") issued a report dated August 30, 2013 (the "Staff Report") requesting that the Commission investigate certain issues: (1) the release of aggregated, anonymous customer usage information; (2) the release of information identifying PTS and net metering customers; and (3) RES access to its customers' interval usage data that is not used for the purposes of billing a customer.²² The Commission initiated an investigation in these matters on September 4, 2013 in Docket No. 13-0506 ("Data Privacy Docket").

a. Aggregated, Anonymous Data

During the workshops, it was noted that electric utilities receive from a variety of local governments, educational and research institutions, and others requests for "anonymous" data about electric service use, i.e., for data at the individual customer level but without data identifying the customer to which the data corresponds. In order to permit such data to be made

²¹ See 2013AIPR Order at 15.

²² Staff Report at p. 3

available to authorized third parties, while at the same time protecting personal and customer specific information from unauthorized disclosure, Staff recommended in the Data Privacy Docket that the electric utilities should establish and follow a defined anonymous data protocol (“Data Protocol”) when receiving requests for data concerning the use of electric utility service at the individual customer level. Staff suggested that data at the individual customer level could be provided anonymously (a) for a geographic area no more granular than a five-digit zip code plus the first two to four additional zip digits (“zip+2-4”) and (b) only when that geographic area has at least 30 customers of each type or class for which data is provided. CUB supported Staff’s proposed Data Protocol, but recommended that the minimum number of customers be lowered to 15 with the proviso that no individual customer’s data could comprise more than 15% of all the data provided (“15/15 Rule”).

The Commission agreed that electric utilities should establish and follow Staff’s Data Protocol, but with CUB’s proposed 15/15 Rule. The Commission believed that this methodology would best achieve the goal of making such data available to authorized third parties while also protecting person and customer specific information from unauthorized disclosure pursuant to the PUA.²³

b. Identification of PTS and Net Metering Customers

From discussions during the workshop, there was an understanding that competitive suppliers have legitimate reasons to learn certain facts about individual customers, and that freer access to types of individual customer information could assist in realizing certain benefits of the smart meter infrastructure. At the same time, ComEd and other parties expressed concerns related to customers’ privacy interests – both in the obvious interest of adhering to state law and because data privacy had been cited as a reason for customer refusals of smart meter deployment.

The Commission ruled that a customer’s participation in PTS or net metering programs is billing data and that verifiable authorization from individual customers is required under the PUA before disclosure may occur. The Commission also determined that possession of an account number should be considered customer authorization to receive certain information about such customer’s account, including whether the customer is a PTS or net metering customer, or a participant in any supply related or demand response program offered by the utility. Finally, the Commission also found that the electric utilities should not be required to provide lists of customers that possess one or more of the above mentioned characteristics, as this would contravene Section 16-122.²⁴

²³ Order of January 28, 2014, in Docket No. 13-0506 at 17-18 (“Data Privacy Order”)

²⁴ Data Privacy Order at 21-2.

c. RES Access to Customer’s Interval Data Not Used for Billing Purposes

Discussions in the workshop brought up the issue of RES access to interval data that ComEd collected from customers involved in the AMI Pilot, but which was not used to develop the bill for the customer. This request raised issues concerning what type of customer authorization the RES would need to obtain in order for the electric utility to provide interval data to the RES, and how the RES would verify to the electric utility that it had obtained proper customer authorization.

Staff asserted that RESs should obtain customer authorization for access to this information either through initial signup or separate verifiable authorization consistent with Section 2EE of the Consumer Fraud Act.²⁵ In the municipal aggregation context, Staff recommended that RESs be required to disclose in the opt-out documentation that was sent to all customers in the municipality that this interval data was available and that the failure to opt-out of the program would constitute consent for the RES to have access to the information. Staff then proposed that RESs would certify to the utilities that they had obtained such authorization through the development of a new step in the direct access service request (“DASR”) process. The Commission supported Staff’s proposal regarding the level of authorization necessary to access customers’ interval data, but directed that the parties come together in an effort to reach consensus regarding the method for achieving this result in future workshops. This method should address the electric utilities’ concern that they not bear the burden of interpreting the scope of consent obtained by suppliers, including physically receiving and reviewing written customer authorizations, or be required to demand proof of individual customer authorization prior to releasing interval usage data to a RES. Whatever method is agreed upon in the workshops, the Commission stated that it must be clear that the responsibility to obtain these customer authorizations rests solely with the RES, and that the RES should be required to separately and affirmatively acknowledge to the utility that it has proper customer authorization.²⁶

2. RES Offering TOU and Other Dynamic Pricing Products

ComEd has long supported customer choice and has worked for over a decade to assure its growth and success. However, ComEd has previously stated that a utility-offered TOU rate is a potential disruption to the competitive market as it continues to evolve. During the workshops, the RESs demonstrated their experience in offering TOU and other dynamic pricing products in other markets and indicated their interest in doing so in Illinois.

²⁵ 815 ILCS 505/2EE

²⁶ Data Privacy Order at 26-8.

During the workshops held in 2013, parties explored the enhancements required to enable RESs to offer services and products enabled by AMI meters, including supply offerings incorporating TOU pricing, demand response and energy efficiency. These workshops addressed RESs' expectations for access to interval data from AMI meters and the electronic data interchange issues related to providing such data. ComEd used the information and feedback from workshop participants to design a proposed pilot program and tariff, Rider RMUD – Residential Meter Usage Data (“Rider RMUD”). The features of this pilot program and of the tariff were discussed in that workshop process and resulted in ComEd filing a petition and proposed tariff with the Commission on November 15, 2013 in Docket No. 13-0635. That petition was approved on December 4, 2013 by the Commission.

Beginning January 16, 2014, Rider RMUD authorized ComEd to provide granular residential meter usage data to authorized RESs taking service under Rate RESS – Retail Electric Supplier Service (“Rate RESS”) serving those residential customers that provide not only electric power and energy supply services, but also TOU pricing and/or demand response products (“DR Products”), all as described in the tariff. Rider RMUD was filed and approved as a pilot tariff: (a) because of technical limitations on the number of participating customers inherent in the legacy meter data management system (“MDMS”) and (b) to limit the cost of the pilot to a reasonable and prudent sum. Once ComEd’s new MDMS is installed and tested, as described in the AIPR, ComEd will modify or replace Rider RMUD with a permanent tariff authorizing the provision of interval usage data.

ComEd also circulated to workshop participants a draft petition and proposed revisions to its Rider PORCB – Purchase of Receivables with Consolidated Billing (“Rider PORCB”). Specifically, the proposed tariff revisions enable ComEd to produce a bill that includes credits for DR Products provided by a RES to its customers. Currently, Rider PORCB is limited to the purchase of RESs’ receivables, with ComEd providing billing of the RESs’ electric power and supply service along with its billing of delivery service, but does not provide for the billing of other products or services. These proposed revisions allow RESs that rely upon Rider PORCB for their customer billings and bad debt management to offer multiple forms of DR Products to customers with demands under 400 kilowatts, including residential customers. Once ComEd reaches consensus with the stakeholders, it will file the petition and revised rider with the Commission for approval.

The specific purposes of Rider RMUD and the proposed changes to Rider PORCB are first, to encourage and support development by RESs of TOU pricing and DR products. TOU-priced supply offerings by RES, based on customer usage information, can promote an efficiently competitive retail supply market. Piloting this interchange now, before the new MDMS is in place, will allow ComEd and RESs to gain experience concerning the communication and use of such data, and enhance customer benefits from AMI by facilitating access to potentially new and innovative pricing options offered by RESs that can ultimately reduce customers’ energy costs. Rider RMUD and the proposed changes to Rider PORCB are two of the tangible products of the collaborative workshop process and is supported or not opposed by the parties actively participating in the workshops.

Rider RMUD and the proposed changes to Rider PORCB are also important to ongoing efforts of ComEd, RESs and others to promote efficient market development. During the workshops, ComEd also used information and feedback from workshop participants to incorporate changes in the AMI education materials, which were distributed in early 2014, by referring to the pluginillinois.org/smartmeter website as a source for customers to gain information about AMI-enabled offerings by RESs.

Finally, ComEd will continue to enable customers' use of smart grid technology through its current and planned offerings. Specifically, ComEd will continue to make RRTP available to every residential customer. Customers can begin enrolling in PTS in 2014 with the opportunity to begin receiving credits for curtailments during the summer of 2015. Furthermore, existing customers with an AMI meter will continue to have their hourly data available via the website in order to take greater control of their electricity usage and costs.

IV. VULNERABLE CUSTOMERS

In 2013, ComEd held discussions with various stakeholders on vulnerable customers. These included discussions with the following: the Attorney General, the City of Chicago's Department of Family Services and Support and the Illinois Department of Commerce and Economic Opportunity ("DCEO"). In addition, ComEd held a stakeholder outreach meeting.

As ComEd reported in its 2013 AIPR, the stakeholders have agreed to define and identify vulnerable customers as customers belonging to the following customer groups:

1. Low income
2. Very young (from birth to age 5)
3. Older individuals (age 65 and older)
4. Those who have limited English proficiency or literacy
5. Individuals with a functional disability, such as impaired mobility
6. Persons who are socially isolated

There remain significant barriers to tracking vulnerable populations. ComEd's customer files do not contain information as to age, English fluency or other customer conditions so as to enable ComEd to place customers into the category of vulnerable customers. In addition, obtaining data on customers meeting any of the six criteria used to define vulnerable customers by zip code or census tract is not useful for purposes of the reporting requirements.

However, ComEd will continue to report on vulnerable customers using the limited information in its possession regarding low income customers (Group 1, above) and customers with qualifying life support equipment at the premises or having a certified medical condition in the household (Group 5, above) and will supplement such reports if additional verifiable data becomes available from other entities, such as DCEO. In addition, ComEd will continue to

administer assistance programs and will engage in education and outreach for low income customers. Low income customers are defined as those customers who participate in the Low Income Heating Assistance Program (“LIHEAP”), the Residential Special Hardship Program, the CHA All Clear program, or the Percentage of Income Payment Plan (“PIPP”).

In 2014 ComEd will enhance outreach to customers in need through alerts, enhanced messaging and payment arrangements.

V. DG MAPPING

In the June 2012 Order, the Commission determined that concerns raised by CUB and the ELPC about perceived barriers to the installation of DG needed to be addressed in a separate rulemaking. The Commission, however, directed ComEd to work with interested parties to implement their “request for a map showing where distributed generation would be good or bad.”²⁷

In compliance with the June 2012 Order, ComEd met with CUB, ELPC, and other interested parties on many occasions during 2012 and 2013 to work on the development of the requested mapping tool. During these discussions, parties provided input on the selection of a Google Earth^(TM) based tool and reviewed and provided feedback on the map tool and the description of the tool. ComEd posted the map tool on ComEd’s website and sent an email to interested parties on August 15, 2013 informing them of the posting of the map tool.²⁸

ComEd plans to update the map once a year initially, and plans to have more frequent updates if there is a large increase in DG interconnection activities in the future. The update is also necessary if and when there is a change to the rules that govern the review and approval of DG interconnection requests for DG facilities with a nameplate capacity of up to 10 MVA.²⁹

VI. VOLTAGE OPTIMIZATION

A. Background

Voltage Optimization (“VO”) is a combination of Conservation Voltage Reduction (“CVR”) and Volt-VAR Optimization (“VVO”). These programs are intended to reduce end-use customer energy consumption and peak demand while also reducing utility distribution system energy losses. As noted above, the ICC, in Docket No. 13-0495, ordered that a proposal for a VO feasibility study be include in ComEd’s next AMI plan filing if such a study is not already

²⁷ June 2012 Order at 50

²⁸ <https://www.comed.com/customer-service/rates-pricing/interconnection/Pages/distribution-under-10000kva.aspx>

²⁹ 83 Ill. Admin. Code Part 466 – Electric Interconnection of Distributed Generation Facilities

provided for in the Smart Grid budget. In accordance with the final order in that docket, since ComEd does not currently have a budget for VO in its AMI plan, the Company includes a proposal for a VO feasibility study herein

B. Approach

ComEd plans to engage a qualified, experienced consultant who will conduct a feasibility study of implementing VO to achieve reduction of end-use energy consumption and peak demand while reducing utility system energy losses. The study should include an evaluation of potential VO technologies that can cost-effectively achieve the desired objectives considering the potential for energy reductions by major ComEd customer classes and the potential to reduce customer voltage while not violating voltage regulation standards set forth in 83 Ill. Admin. Code 410.280. The study should consider the range of various distribution voltages, feeder configurations including length, existing voltage regulation facilities and substation configurations in use on the ComEd distribution system.

C. Deliverables

The feasibility study report should include an assessment and recommendations for technologies most appropriate to implement VO for the ComEd distribution system, including risks and recommended hardening or other improvements to current facilities necessary for cost effective implementation. Costs to implement VO, including the basis for estimated values, should be reported on a per-kW peak demand or other appropriate measure for evaluating costs and benefits. Benefits, including reductions in end-use energy consumption, peak demand and utility system energy losses, should be reported on a similar basis to evaluate cost effectiveness. Assumptions, such as CVR factor, extent of voltage reduction, cost of energy and capacity, etc. should be documented. The report should also estimate the reduction in ComEd delivery service revenues.

D. Timeline

The timeline for the project is as follows:

- April 2014 – Issue requests for qualifications to identify qualified consultants with experience conducting a VO feasibility study.
- May 2014 – Issue requests for proposals for conducting a feasibility study to determine costs and benefits of applying VO for ComEd.
- July 2014 – Consultant proposals submitted to ComEd; ComEd begins evaluation of proposals.
- September 2014 – ComEd awards contract to selected consultant.
- December 2014 – Consultant final report due.

E. Budget

A preliminary estimate of the cost of a VO feasibility study for ComEd is \$500,000.