ComEd
An Exelon Company

Smart Grid Advanced Metering Annual Implementation Progress Report

Submitted by:
Commonwealth Edison Company

April 1, 2016

ComEd
An Exelon Company

Table of Contents

I. Introduction and Overview

Commonwealth Edison Company ("ComEd") presents this Annual Implementation Progress Report ("Report" or "AIPR") of its Smart Grid Advanced Metering Infrastructure ("AMI") Deployment Plan ("AMI Plan" or "Plan") to the Illinois Commerce Commission ("Commission" or "ICC"). ComEd's original proposed AMI Plan was filed on April 23, 2012 in ICC Docket No. 12-0298. The Commission entered an Order approving ComEd's AMI Plan with certain modifications on June 22, 2012 in ICC Docket No. 12-0298 ("June 2012 Order"). ComEd filed a modified AMI Plan in compliance with the June 2012 Order in ICC Docket No. 12-0298 on July 13, 2012 ("Modified AMI Plan"). On October 3, 2012, ComEd submitted a revised Modified AMI Plan on rehearing in ICC Docket No. 12-0298 ("Revised AMI Plan"). The Revised AMI Plan was approved by the Commission in its Order on Rehearing in ICC Docket No. 12-0298 dated December 5, 2012 ("December 2012 Order"). On April 1, 2013, ComEd submitted the 2013 AIPR, which included certain updates to the Revised AMI Plan ("2013 Revised AMI Plan"). On April 9, 2013, the ICC opened ICC Docket No. 13-0285 to investigate the 2013 AIPR. After the passage of PA 98-0015, the ICC entered an Interim Order on June 5, 2013 approving an accelerated deployment schedule in conformance with the new law. The 2013 AIPR was approved in the final Order entered on June 26, 2013 in ICC Docket No. 13-0285 ("2013 AIPR Order").

On March 13, 2014, ComEd filed a petition with the Commission seeking approval to accelerate the deployment of AMI meters (throughout this document, the terms "AMI meters" and "smart meters" will be used interchangeably) that was assigned ICC Docket No. 14-0212. The Commission, on its own motion, reopened Docket Nos. 12-0298 and 13-0285 and consolidated those dockets with the acceleration petition as ICC Docket Nos. 14-0212, 13-0285, 12-0298 (Cons.) ("Deployment Acceleration Proceeding"). On April 1, 2014, ComEd submitted the 2014 AIPR, including updates to the 2013 Revised AMI Plan to reflect the incremental updates to be made if the Commission approved the proposed accelerated meter deployment schedule in the Deployment Acceleration Proceeding. The Commission approved the proposed accelerated deployment schedule in its final Order dated June 11, 2014, in Docket Nos. 14-0212, 13-0285, 12-0298 (cons.), and required certain modifications to the updated 2013 Revised AMI Plan to reflect that ComEd's consumer education budget will be maintained and that ComEd will devote the same level of resources for education and outreach that it had planned under the acceleration schedule approved in Docket No. 13-0285. On July 2, 2014, in compliance with the Commission's June 11, 2014 final Order, ComEd filed a Revised AMI Plan ("2014 Revised AMI Plan") reflecting the changes approved and required by the Commission in the Deployment Acceleration Proceeding. On April 1, 2015, ComEd submitted the 2015 AIPR, with updates to the 2014 Revised AMI Plan ("2015 Revised AMI Plan"). These updates were to change the operational tracking measure for customers with net metering and to update the AMI Deployment Schedule. The 2015 Revised AMI Plan was deemed accepted by the Commission

by operation of law when an investigation of the 2015 AIPR was not commenced within 21 days of its filing.[1]

This Report summarizes the activities and achievements accomplished in 2015 and the activities and goals planned for 2016 in the areas of AMI Operational Deployment, Customer Applications, Customer Outreach and Education, and Metrics and Milestones.[2] There are six numerical attachments to this Report that are referenced in the Metrics and Milestones section. Additionally, there are four appendices to this Report. Appendix A addresses issues and topics beyond those specified for inclusion in this Report by Section 16-108.6(e) of the Public Utilities Act ("PUA"),[3] that the Commission originally directed ComEd to submit with its 2013 AIPR, and that ComEd has voluntarily chosen to update in this AIPR for informational purposes only. Appendix B is the fifth Biannual Report required by ComEd's Rider NAM - Non AMI Metering ("Rider NAM"). Appendices C and D contain updates to the 2015 Revised AMI Plan in legislative "redline" and "clean" forms, respectively, to reflect a small upward adjustment to the AMI meter deployment volume planned for 2016 and corresponding downward adjustments to the deployment volumes planned for 2017 and 2018.

Operational Deployment

In 2015, the AMI team completed a number of operational objectives, including: (1) implementing improved outage management and field and back office operations functionality; (2) successfully installing meters based on the new meter deployment schedule updated in the AMI plan in 2015; (3) installing AMI meters for Commercial & Industrial customers in certain areas; (4) continuing the planning and execution of field deployment and cross dock operations; (5) completing the implementation of system enhancements and processes to continue the improvement of system operations; (6) launching a targeted meter deployment effort in Rockford to drive reduction in estimated bills, improved efficiency in meter reading operations, and an overall improvement in the system read rate.

In 2016, the AMI team plans to expand on the successes achieved in 2015. ComEd plans to install 1,003,200 meters in 2016. A main focus of the IT and Business Transformation team for 2016 will be to further enable the outage management functionality made possible by AMI technology.

[1] 220 ILCS 5/16-108.6(e).

[2] This Report refers to various systems, standards, groups, teams, organizations, and processes described in more detail in the current AMI Plan. While acronyms used in this Report are defined when introduced, readers can refer to the current AMI Plan for more detailed information and background on such terms and acronyms.

[3] 220 ILCS 5/16-108.6(e)

Customer Applications

In 2015, the AMI team accomplished a number of Customer Applications goals, including: (1) continuing to launch or enable programs and services under the "SmartGridExchange℠", like the launch of Peak Time Savings and the completion of software and other updates to enable Green Button Connect for residential customers in the near future; (2) continuing to support the Smart Meter Connected Devices ("SMCD") pilot, which allows residential customers to connect and use wireless devices to receive immediate, detailed energy-usage information from their smart meter to help monitor and manage their electric bills; (3) conducting further technology research in order to survey new opportunities in the market; and (4) continuing to support Residential Metered Usage Data ("RMUD").

In 2016, ComEd plans to further build on its progress under the first two years of the SmartGridExchange℠ by pursuing ways to expand successful 2015 initiatives to bring the benefits of AMI to even more customers, like the Thermostat Pilot and the Student Innovation Contest. Also, ComEd will pursue ways to expand successful 2015 in-market programs, like Peak Time Savings and Smart LED Streetlights. Finally, ComEd will continue technology research on a regular basis and will complete updates as the vendor landscape evolves. As the AMI meter rollout continues to progress in 2016, more and more ComEd customers will benefit from the innovative programs, technology and cost savings enabled by the smart grid.

Customer Outreach and Education

In 2015, the AMI team accomplished a number of goals related to the development of Customer Outreach and Education programs, including: (1) increasing efforts consistent with the growth in deployment levels; (2) continuing focus on general education to provide customers with information on the use and benefits of smart meters; (3) continuing the use of messages that educate customers about energy-saving tips and energy-efficiency program offerings; (4) continuing research to enhance customer outreach efforts and messages; (5) on-going staged-messaging communications to educate customers throughout the deployment process; (6) on-going customization of education programs to fit specific customer segments as identified by demographic data, and; (7) enhancements to ongoing financial-assistance programs designed to assist low-income customers.

The outreach and education efforts planned for 2016 include: (1) continuing focus on general education to provide customers with information on the use and benefits of smart meters; (2) continuing the awareness/education tracking study and the post-installation satisfaction study (3) initiating a series of mailings promoting emerging smart meter-enabled technologies that can help customers save energy and money; (4) implementing a Peak Time Savings algorithm to help identify customers with the greatest potential to save so ComEd can target them with additional mailings; (5) on-going promotion of financial-assistance programs designed to assist low-income customers.

Consultation with Smart Grid Advisory Council ("SGAC")

As required by Section 16-108.6(e) of the PUA, 220 ILCS 5/16-108.6(e), ComEd consulted with the SGAC regarding this AIPR. ComEd provided a complete draft of the AIPR to the SGAC in advance of its March 8, 2016 meeting. ComEd also made a presentation on its AIPR at that meeting, and personnel were present that were knowledgeable on each relevant subject.

AMI Plan Revisions

The edits to implement the updates to the 2015 Revised AMI Plan as discussed above are contained in Appendices C and D. The update to the planned deployment volumes for 2016, 2017, and 2018 is discussed above and explained in greater detail in Chapter 2 of this AIPR.

II. AMI Operational Deployment

A. 2015 Activities and Accomplishments

2015 was another successful year for the ComEd AMI program, with significant progress made across many areas. ComEd built upon its accomplishments in 2014, including exceeding the planned installation of 984,617 AMI meters over the course of the year. ComEd installed a total of 1,077,758 meters in 2015 in a safe and productive fashion. ComEd also developed new network design solutions for high rise buildings that has enabled reliable and cost-effective network and meter deployment in the Chicago Loop area. Additionally, the Information Technology ("IT") and Business Transformation ("BT") teams delivered significant functionality and tools that are central to the ongoing transformation of operations and the realization of benefits to ComEd and its customers.

The AMI program continued to have a positive economic impact throughout the ComEd service territory by maintaining the job creation momentum built in 2014. The AMI program created additional jobs in 2015[4], including positions for meter installers, Cross Dock[5] personnel, electricians, supervisors, project managers, IT analysts, and engineers. Once again, not a single job loss for a ComEd employee was experienced as a result of the program in 2015.

ComEd also continued to demonstrate a strong commitment to the safety of customers and employees. Because of the completion of safe and high-quality meter installations at a very high volume, the AMI Program was a strong contributor to ComEd's best overall safety performance

[4] Additional information can be found in the Energy Infrastructure Modernization Act Annual Jobs Creation Report.

[5] Cross Dock refers to the meter deployment "hubs" that are geographically situated throughout ComEd's service territory near the planned areas for deployment. Cross Docks serve several functions for the AMI Deployment team, including acting as the receiving point for meters, vehicles, and other materials, as well as the meeting point for meter installers on a daily basis. Each day at the Cross Docks, the meters are loaded onto vehicles for next day's field installation, and the replaced legacy meters are returned at the end of the day prior to recycling.

on record; this performance was recognized nationally, as ComEd was named "One of America's Safest Companies" in 2015 by EHS Today Magazine, a leading voice on Environment, Health, and Safety issues.[6] ComEd's safety culture was also demonstrated by continuing to install Underwriters Laboratory ("UL") certified AMI meters and equipment within the service territory and proactively completing repairs, when prudent, to customer meter bases and associated meter base components in order to increase the safety of the customer premise.

The realization of AMI business case benefits increased throughout 2015 as a result of new functionality delivery, enhanced systems, and having more AMI meters deployed throughout the service territory. Valuable AMI-enabled enhancements were made in the areas of reliability, outage management, field and back office operations, and customer programs and interactions. These enhancements were made in alignment with driving a premier customer experience.

The main customer benefit areas related to AMI included reduced consumption on inactive meters ("CIM"), reduced bad debt, a reduction in unaccounted for energy ("UFE"), and a reduced number of estimated customer bills[7]. These were driven largely by the automation and enhanced functionality of the remote connect/disconnect switch (in alignment with ICC guidelines), new data analytics solutions, and an improved rate of meters read system-wide.

Operational benefits also increased throughout the year, most notably through more efficient utilization of field resources and a reduction in truck rolls for manual meter reading and other field activities throughout the AMI-deployed areas. This included enhanced capabilities for back office resolution of many issues that previously required a field visit. The benefits realized in these areas are socialized across all ComEd customers and are not limited to those that are within the areas in which AMI meters have been deployed.

The sections below provide additional details and highlights of the ComEd AMI Program in 2015. This includes accomplishments within the Project Management Office ("PMO"), AMI Network and Meter Deployment, Customer Experience, AMI IT and Business Transformation ("BT"), and Change Management areas. A summary of actual costs compared against the planned budget and the associated explanation is also included. Results for the established metrics and milestones are contained in Chapter 5 of this report.

1. Project Management Office (PMO)

Throughout 2015 the PMO continued to manage the overall scope, schedule, and budget for the Program along with providing overall governance, planning, oversight, and identification and mitigation of risks and issues. Additionally, the PMO is the core team responsible for ongoing

---

[6] http://ehstoday.com/safety-leadership-conference-2015/americas-safest-companies-winners-apollo-mechanical-bmwc-construct.

[7] Actual performance related to these metrics is included in the multi-year performance metric report to be filed by June 1, 2016 per 220 ILCS 5/16-108.5(f-5) (actual filing expected to occur mid-April).

tracking and reporting of the progress of deployment through the use of the real-time program dashboard that was further refined in 2015.

The PMO also continued in a centralized contract management function focusing on the oversight and administration of the many field-related and back office contractors that have partnered with ComEd in the various active workstreams within the Program. The key activities performed include ongoing management of contract terms and spend to ensure accuracy and spend prudence, on-boarding of staff, and regular oversight of work including safety and quality audits.

ComEd continued to have a diverse group of vendors perform various field-focused functions within the AMI program, further adding to the positive impact of the program to the Illinois economy. In 2015 ComEd welcomed additional partners to the project team to assist with electrician repairs in the field, including LiveWire and B3-Integrated, two certified Minority-Business Enterprises ("MBEs"), and Loescher, a certified Women-Business Enterprise ("WBE"). Additional details are captured in the table below:

Contractor Name	**Services Provided to ComEd in 2015**	**Number of Resources in 2015**[8]
HBK Engineering	Network design	5
KDM Engineering	Network design	4
PMI Energy Solutions	Network installation	13
Corix Utilities	Meter installation	68
MZI	A-Base style meter housing upgrades and meter installation	25
Quantum Crossings	Electrician repairs to customer meter-related equipment	6
Durkin Electric[9]	Electrician repairs to customer meter-related equipment	11
Loescher	Electrician repairs to customer meter-related equipment	1

[8] Values rounded to nearest whole number based on headcount over the 12-month period.

[9] Includes contracted resources from B3-Integrated

Intren[10]	Frost Loop repairs (detailed below) and AMI Pole Cuts	12
PMI	AMI Pole Cuts	4
Chatham Business Association	Community Outreach	5[11]
Total		**153**

In 2015 the AMI Program identified the need to establish a governance process to evaluate potential programs and services that intend to leverage the AMI network for wireless communications and transactions. The AMI Network Governance Committee was formed to serve this purpose and is comprised of a cross-functional group of subject matter experts representing operational and technical groups throughout the organization that evaluate the potential risks and impacts of these proposed programs and services, including cyber security risks, impacts to core ComEd operations and reliability, and the business case approach to ensure that the anticipated benefits to ComEd and its customers merit further investigation. Examples of these programs include Smart LED Street Lights, Smart Water Meters, and other emerging technologies that can leverage the Silver Spring Networks ("SSN") mesh communications network.

2. AMI Network and Meter Deployment

In 2015 ComEd surpassed the planned level of AMI meters installed for the third consecutive year. The AMI Deployment team safely and efficiently installed 1,077,758 AMI meters, exceeding the planned total of 984,617 meters. In addition, the AMI Deployment team effectively planned and executed the AMI network design, planning, and device installation required to enable two-way communication between the installed AMI meters and the back office.

Network Deployment

In 2015 ComEd completed the network design activities in Rockford, Libertyville, University Park, Bolingbrook, Aurora, Elgin, and Joliet in advance of the launch of meter deployment in those areas. ComEd worked with its contractor partners to develop detailed field-level designs for the network devices required to enable communication. Field surveys were completed and engineering designs were developed for the eventual installation of SSN AMI Access Points and Relays in those areas. ComEd worked with contracted partners to install 985 AMI network devices, including 249 SSN AMI Access Points and 736 Relays.

[10] Includes contracted resources from LiveWire

[11] 11 jobs were created and active for a 6 month period

In alignment with the established plan, ComEd developed a tactic for network solutions in the downtown high-rise buildings within the Chicago Loop in 2015. As part of this operation, an initial group of 29 downtown buildings was identified to be part of a 'soft launch' for network and meter deployment in the third and fourth quarters. Building structure assessments were completed collaboratively by the network and meter deployment teams to measure the radio frequency[12] ("RF") communication levels, and to determine a design for the device configurations required to enable mesh communication to the AMI meters, once installed.

The learnings and insights developed during the soft launch in the Loop area were utilized in the development of the overall plan for AMI network and meter deployment in the Chicago Loop in 2016. As part of the Loop soft launch, 6,768 AMI meters were installed. To further improve the likelihood of AMI meter communication to the network without additional effort and cost, ComEd implemented a high-rise construction standard that included installation and construction requirements for those customers designing indoor meter rooms for high-rise buildings.

The following table provides a summary of completed and in-progress network design and installation activities through the end of 2015. All remaining AMI network coverage required to install AMI meters throughout the remainder of the service territory will be designed and deployed in 2016, well ahead of the meter deployment schedule (described further in the 2016 Planned Activities section of this chapter).

Table 1: Operating Area Network Design and Installation Progress

Operating Area	Network Design	Network Installation	# of Access Points Installed	# of Relays Installed
Maywood	Complete	Complete	21 of 21	36 of 36
Chicago South	Complete	Complete	72 of 72	71 of 71[13]
Glenbard	Complete	Complete	51 of 51	121 of 121
Mt. Prospect	Complete	Complete	44 of 44	214 of 214
Chicago North	Complete	Complete	169 of 169	7 of 7

[12] Radio Frequency ("RF") refers to any of the electromagnetic wave frequencies that lie in the range extending from around 3 kHz to 300 GHz, which include those frequencies used for communications or radar signals

[13] Through the network optimization process, a total of 53 additional devices (1 AP, 52 Relays) were installed within the Chicago South, Glenbard, Mt. Prospect, and Chicago North Operating Areas. This optimization process involves a review of overall connectivity once the planned network and meter deployment activity is complete, and is accounted for within the overall program scope, schedule and budget.

Crestwood	Complete	Complete	57 of 57	50 of 50
Skokie	Complete	Complete	38 of 38	67 of 67
Rockford	Complete	Complete	41 of 41	151 of 151
Libertyville	Complete	Complete	58 of 58	163 of 163
University Park	Complete	In Progress	33 of 60	252 of 396
Bolingbrook	Complete	2016 Plan	0 of 29	0 of 34
Elgin	Complete	2016 Plan	0 of 30	0 of 24
Aurora	Complete	2016 Plan	0 of 31	0 of 64
Joliet	Complete	2016 Plan	0 of 45	1 of 184[14]
Freeport	In Progress	2016 Plan	0 of TBD	0 of TBD
Crystal Lake	In Progress	2016 Plan	0 of TBD	0 of TBD
Dixon	In Progress	2016 Plan	0 of TBD	0 of TBD
DeKalb	In Progress	2016 Plan	0 of TBD	1 of TBD
Streator	In Progress	2016 Plan	0 of TBD	0 of TBD
Chicago Loop	In Progress	In Progress	21 of TBD	0 of TBD
Total			**605 of 746** (+ TBD)	**1134 of 1582** (+ TBD)

In addition to the network devices that were installed throughout the service territory in 2015, the first "microAP" device, which is contained within an AMI meter, was installed in 2015. microAPs are a new device within the SSN offering that was not previously available. The microAP provides a more agile tool for improving communications, with the capability to communicate the data from ~50 AMI meters wirelessly, depending on operating conditions and signal strength. These devices are best-leveraged for locations where RF connectivity is limited, and/or where installing a larger network device (AP or Relay) is challenging. Such locations include areas within high rise buildings and in certain rural locations where the mesh network

[14] One Relay was deployed in Joliet and DeKalb to bolster connectivity for a group of AMI meters that were installed as part of the New Business process

will be less dense. ComEd installed 69 microAP meters in 2015 and will continue to explore their use, particularly in the Chicago Loop area, as a component of the expanding suite of innovative tools that will be leveraged to build a robust and secure mesh network throughout the service territory. The use of microAP devices does not have a material impact on the budgeted spend for network deployment activities.

Meter Deployment

In 2015, ComEd continued the safe and efficient deployment of AMI meters in several operating areas, leveraging the Cross Dock model described in ComEd's 2014 and 2015 AIPRs and used effectively since the launch of deployment. The repeatable modular structure of the Cross Dock allowed for efficient expansion of installation capabilities to achieve the daily production levels required to meet and exceed the volume of meter deployment called for within the plan. Along with ongoing deployment in Chicago North, Chicago South, Maywood, Mount Prospect, and Glenbard, three new operating areas began large-scale AMI meter installations in 2015. These new Cross Docks are located within the Crestwood, Rockford, and Skokie Operating Areas.

ComEd and Union Local 15 ("Union") continued to operate within the landmark labor agreement reached in 2014 to complete AMI installations and inventory management at ComEd Cross Docks. Successful execution of this labor agreement continues to demonstrate a strong working relationship between ComEd and the Union, which will remain a critical success factor going forward.

In 2015, ComEd also continued a successful partnership with meter installation contractors Corix and MZI Group to supplement ComEd labor to meet the planned quantity of installations. These partners continued to follow ComEd approved processes, procedures, staffing structure, and material tracking protocols, resulting in consistency across the combined Meter Deployment team.

Figure 1: The opening of the Corix Cross Dock in Buffalo Grove, including representatives from Corix and ComEd, Buffalo Grove Village President Beverly Sussman, and Illinois Representative Elaine Nekritz

Throughout 2015, Corix installed over 325,000 meters as part of their multi-year contract. Corix continued to leverage lessons learned from meter installations completed throughout the United States, while also working closely with ComEd to refine procedures and training materials for impacted ComEd employees and contractor staff. Corix completed installations within the Glenbard, Mount Prospect, Chicago South, Skokie, and Maywood Operating Areas.

The AMI Deployment team continued to complete A-Base installations, in alignment with the established plan[15]. MZI Group again performed the majority of these exchanges, though ComEd installers began completing these installations in 2015 after receiving the appropriate training. In total, over 26,000 AMI A-base installations were completed by MZI Group in 2015 throughout the deployment footprint.

The following is a summary of the meters deployed as a part of the AMI Program in 2015:

Table 2: Number of Meters Installed per Operating Area

Operating Areas deployed in 2015	Number of Meters Projected (2015)	Actual Number of Meters Installed
Chicago North	356,809	402,277
Chicago South	117,454	155,597
Crestwood	155,501	149,003
Maywood	13,448	11,548
Glenbard	25,275	46,494
Skokie	90,200	63,932
Mount Prospect	192,422	212,396
Rockford	0	11,127
Libertyville	0	2[16]

[15] The A-Base meter is an older style of meter and enclosure that connects to the electrical service through the bottom of the meter. Starting in 2014, ComEd began utilizing a UL-certified adaptor for AMI meter exchanges involving A-Base meters.

[16] Due to the meter reading route that contained these two meters being re-routed for efficiency purposes from Mount Prospect to Libertyville, these meters are technically shown as completions in the Libertyville Operating Center even though the exchanges were completed via the Mount Prospect Operating Center.

Joliet	0	76[17]
University Park	0	19[18]
Field and Meter Services	33,508	25,287
Total	**984,617**	**1,077,758**

As noted in the table above, ComEd installed more meters than were planned in five of the eight active operating areas in 2015 (excluding the very small volume of meters deployed in Libertyville, Joliet, and University Park with the exchanges completed by ComEd Field and Meter Services). The increase in installations over the planned-for volume for four of those five areas (Chicago North, Chicago South, Glenbard, and Mount Prospect) can be attributed to better-than-expected productivity and adjustments made to deployment planning and resource allocation.

The fifth Operating Area with higher-than-planned completions was Rockford, where ComEd completed 11,127 exchanges throughout 2015. Through collaboration with the Customer Operations leadership team, an opportunity to improve efficiency and the customer experience in the Rockford area was identified and executed by the AMI team. Meters and locations that had been historically difficult to access and read manually by meter readers, including a large population of indoor meters, were targeted for exchange to AMI meters. These targeted meters were also in close proximity to the already-installed AMI network infrastructure (AP or Relay) for communication purposes. The Meter Deployment team also partnered with the AMI Customer Experience team to analyze the specific Rockford accounts that were selected, and to conduct proactive customer outreach to ensure awareness and understanding of the AMI Program and to drive a positive customer experience.

The 11,127 AMI meters installed in the Rockford area in Q3 and Q4 of 2015 helped to drive a reduction in estimated bills, improved efficiency in meter reading operations, and an overall improvement in the system read rate. Deployment will continue in Rockford in 2016, as is further described in the 2016 Activities and Goals section of this report. The AMI team will continue to remain flexible and explore additional opportunities for emerging operational and customer experience improvements that may not be called out specifically in the plan. The team will ensure that any such opportunities or slight deviations will not sacrifice the overall goals and objectives of the program, including maintaining alignment with the established schedule and budget.

[17] These meters were located in an area within Joliet that had several operational challenges for meter reading, including meter reader safety concerns. After reviewing the accounts with ComEd Meter Reading, the AMI team determined that completing these exchanges slightly ahead of schedule would be prudent.

[18] These meters were related to an exception made to complete exchanges slightly ahead of schedule in University Park due to extenuating customer circumstances.

Three Operating Areas experienced meter deployment results that were somewhat less than what was planned in 2015 (Crestwood, Maywood, and Skokie). This was the result of productivity that was lower than expected; this lower productivity rate resulted from unique meter types[19] that require more time to exchange and other operational challenges, including the need for installers in certain areas to resolve yet to be completed meter exchanges (UTC's, etc.) across several meter reading routes. This led to less daily completion totals in some instances. Additionally, some of the resources that had been previously allocated to these Operating Areas were shifted to work assignments in Chicago South as part of a dedicated effort to complete the remaining exchanges there to allow the Deployment team to move into new geographic areas sooner. On an overall basis, the Meter Deployment team exceeded the planned target for meter installations in 2015 by 9.5%.

Along with the deployment of AMI meters by the AMI Deployment Team (ComEd and contractors), a total of 25,287 AMI meters were installed in other areas throughout the service territory by the ComEd Field and Meter Services ("F&MS") organization in alignment with ComEd's strategy. For meters subject to the periodic exchange program[20], ComEd is now installing new AMI meters rather than purchasing and installing non-AMI meters that would subsequently be replaced again once the AMI Deployment team reaches that area. This eliminates the need to complete multiple meter purchases and exchanges in a short period of time, thereby avoiding unnecessary labor and material costs. Once network coverage is established in these areas, the AMI meters will be connected remotely and read wirelessly, thereby eliminating the need for a manual read in alignment with the established plan.

The AMI team continues to plan and execute deployment throughout the service territory based on the geographic rationale described in the originally filed AMI Plan, including the planned order of start and completion times for the Operating Areas[21]. As of the end of 2015, approximately 99% of the AMI meters in Maywood and Glenbard have been deployed, with only unique exchanges remaining, including the customers deferring AMI meter installation in accordance with Rider NAM. The schedule set forth in the 2015 AIPR called for these areas to be completed in 2015, and they can indeed be considered materially complete. Only a sub-set of specialized AMI deployment resources remain in place in the Maywood and Glenbard Operating Areas, and day-to-day operations reflect a fully-deployed environment.

As of December 31, 2015, the total number of AMI meters deployed via the AMI Program, including the AMI Pilot, in the ComEd service territory is 1.82 million. This represents 44% of the total meters throughout the ComEd service territory, positioning the team to complete the

[19] These delays were in part due to the delay in availability of a dual-ohms meter solution that was UL-certified, which ComEd worked with suppliers to design and make available.

[20] Periodic meters are a specific subset of meters which are changed on a rotation every 8 years by ComEd to verify accurate consumption and data collection. Meters serving larger commercial and industrial customers make up the majority of these meters.

[21] Modified AMI Plan at 21-23; 2015 Revised AMI Plan at 21-23

program in the timeline established in the approved plan. The table below provides additional details on the installations completed and remaining.

Year	Meters Deployed	Operating Center(s)
Pilot	127,857	Maywood, Chicago North
2013	70,882	Maywood
2014	540,744	Maywood, Chicago South, Glenbard, Mount Prospect
2015	1,077,758	Maywood, Chicago South, Glenbard, Mount Prospect, Chicago North, Crestwood, Skokie, Rockford
2016	1,003,200	Chicago South, Mount Prospect, Chicago North, Crestwood, Skokie, Bolingbrook, Aurora, Libertyville, University Park, Elgin, Rockford
2017	830,000	Chicago North, Bolingbrook, Aurora, Libertyville, University Park, Elgin, Joliet, DeKalb, Crystal Lake, Dixon, Rockford
2018	506,559	Bolingbrook, Aurora, University Park, Joliet, Crystal Lake, Streator, Freeport, DeKalb, Dixon, Rockford
TOTAL	**4,157,000**	

Installation of large Commercial and Industrial ("C&I") Meters

ComEd began larger-scale deployment of C&I meters in the Maywood, Chicago South, Mount Prospect, Glenbard, and Chicago North Operating Areas in 2015. Prior to the launch, ComEd completed training for Senior Energy Technicians in order to safely and efficiently complete 3-phase meter installations for large C&I customers with cumulative demand and recorder meters. The training sessions, supporting materials, and job aids were developed in coordination with the Change Management and Business Transformation teams. Additionally, the Deployment and Marketing teams coordinated to execute the customer outreach and education strategy for C&I customers. The Change Management ('Change Management and Business Readiness', Chapter 2) and Marketing (Chapter 4) activities are further described later in this document.

Automatic Meter Reading ("AMR") to AMI Meter Exchanges

AMR meters[22] are read through phone line, ethernet, or cellular connections. These meters leverage soon-to-be-retired technology and require specific planning, training, and execution to successfully complete the exchanges to AMI meters. Throughout 2015, AMI Deployment and AMI Operations worked together collaboratively to plan and convert 563 AMR meters to AMI. This effort will continue throughout 2016.

[22] There are 6,277 AMR meters throughout the ComEd service territory.

Unable to Complete ("UTC") Locations

A continued focus of the team throughout 2015 was minimizing the number of UTC meter exchanges[23]. As a result of refined methods and process improvements that have been developed through the course of AMI deployment, the AMI Program reached its lowest annual UTC rate to date at 1.4%. This improved rate is a result of installers gaining access on the first exchange attempt more often, as well as a higher success rate in the resolution of existing UTCs (over 102,000 UTC premises were resolved in 2015). While the team has made progress, avoidance and resolution of UTCs remains an area of focus and will continue to be actively monitored and managed through the end of the deployment timeline.

One specific method that yielded positive results was the launch of the AMI UTC Outreach Initiative. From April through September of 2015, ComEd provided 11 jobs to local individuals in the Chatham neighborhood[24] to educate their neighbors by performing proactive outreach regarding the benefits of smart meters, while also seeking to resolve UTCs. Chatham was selected for this pilot as a result of being a strong community partner with ComEd. The outreach team was able to contact more than 1,200 customers, resulting in 742 smart meter installations at premises where ComEd was previously unable to gain access.

Another improvement was realized through working with the AMI Customer Experience team to update the specific language in UTC/Refusal letters sent to customers to provide more clarity, to improve customer understanding of the process, and to develop an overall improved customer experience. Methods such as this approach will continue to be explored and refined to ensure that UTC rates are properly monitored, managed, and controlled. As noted previously, ComEd plans to complete any UTCs remaining following completion of initial deployment during 2019.

Employee and Customer Safety

ComEd's commitment to a strong culture of safety resulted in an excellent safety record in 2015. This included completion of ongoing refresher training and thorough safety messaging in addition to reinforcement via daily field "tailgate" sessions prior to beginning daily installations. ComEd completed several safety audits and unscheduled safety blitz reviews by management to measure performance and drive overall adherence to safety policies and procedures. Management facilitated daily operational calls with ComEd and contractor labor in order to review all safety and quality issues identified from the previous day and to identify the resolution path for any issues or trends that are noted.

The AMI team also launched Safety Council meetings that occur on a monthly basis at each ComEd Cross Dock. These meetings serve as a forum for employee discussions, concerns, and

[23] A UTC meter exchange occurs when a meter installer is not able to successfully replace a meter at a customer premise primarily due to lack of access.

[24] Located on the South side of Chicago.

ideas that are then addressed via the Safety Council and AMI Leadership teams to determine best solutions and to improve work practices.

ComEd also acquired additional UL certifications on meters and metering components, demonstrating a firm commitment to the safety of employees and customers. There is also a pending patent for engineered solutions related to older-style meter bases that will further drive safe, quality meter installations at a lower cost.

In late 2015, the program launched the Behavior and Prevention Process ("BAPP") Driving initiative, designed to address at-risk driving behaviors through peer-to-peer observations and feedback. Observations are performed by trained BAPP observers on a bi-monthly basis. Findings are then shared and improvement opportunities are identified following each observation cycle. The AMI team is piloting this initiative for eventual rollout across ComEd in 2016.

Overall, the project team experienced five Occupational Safety and Health Administration ("OSHA") recordables in 2015, three of which involved ComEd resources, and two involving Corix. While the goal of the team is to have zero safety incidents, considering the volume of work performed and the nature of these events, the AMI team continues to demonstrate an excellent safety record. The AMI team was a strong contributor to ComEd's best safety year on record in 2015, solidifying its position as an industry-leader in this area.

Additionally, ComEd continued to follow a quality control process for installations to verify the successful exchange of meters. Positive results are established and verified through a series of training courses and field audits that are completed by supervisors and management staff to ensure that all work practices are being followed in alignment with safety and quality guidelines. In 2015, ComEd performed audits of 6.7% of the work performed versus a planned target of 5%, further demonstrating a commitment to quality assurance. The results of these audits showed that installers continue to execute exchanges in a high-quality fashion.

Repairs and Upgrades

The AMI Deployment teams continued focus on the safety of the customer included the active identification of meter-related equipment that has degraded over time, requiring repair before a new meter can be safely installed. As discussed in the 2015 AIPR, in such instances ComEd is proactively completing these repairs of broken or damaged meter bases without assessing direct charges to the individual retail customer. An additional benefit of these repairs is the improvement in the material condition for safe ongoing operations at the customer site.

Figure 2: "Example of broken block discovered in the field, requiring electrician repair."

These repairs are identified by AMI meter installers and completed by licensed electricians. As detailed inspections are completed by the installer to identify hazardous or degraded equipment, the field supervisor assesses the situation and determines whether or not an electrician is required to complete the repair. The two types of repairs completed by electricians in 2015 were, as in 2014, socket repairs and frost loop repairs[25]. A key innovation related to frost loop repairs occurred in April when field resources began using UL-approved Buss Extension equipment to more effectively address the loss of cable slack due to settling. This enhancement has resulted in cost savings for the program while keeping the customer experience in mind by not altering existing landscaping.

Figure 3: Pulled wires and a meter tilting downward resulting in a Frost Loop electrician repair

The table below contains additional details on the types and quantities of socket repairs and Frost Loop repairs completed by ComEd and contractors during 2015:

[25] A "frost loop" refers to the operating condition of a lack of slack in the ComEd-owned entrance wires to the electric service that connects to a meter from an underground service. The lack of slack could cause damage to the meter socket by pulling the meter down or away from its pedestal. Ideally, the service will have sufficient slack to allow for expansion and contraction as the ground freezes and thaws. Over time, frost loops may develop primarily due to weather changes or ground settlement.

Table 3: Contains additional details on the types and quantities of socket repairs and Frost Loop repairs completed by ComEd and contractors during 2015

Type of Repair	Description	# of Repairs Completed
Repair / Refurbish	Modification of meter housing, cleaning of meter base jaws, rebuilding of meter block, modification of fitting cover	2,104
Replacement	Changing of jaws, block, fitting cover, fitting, riser	8,630
Tampering	Bypassing, diversion of power with insertion of jumper wires or objects in fitting, wire connected directly into house, line side tap	419
Other	Other repairs to jaws, riser pipe, loose wires, loose jumpers, etc.	859
Total		**12,012**
Frost Loop	A frost loop refers to the operating condition of insufficient slack in the entrance wires to the electric service that connects to a meter	4,116

Meter Deployment and Meter Installer Efficiency Enhancements

Throughout 2015, the team continued to focus on improvements and enhancements to core deployment and inventory management processes to drive overall efficiency of Deployment operations. These improvements included:

Table 4: 2015 Meter Deployment Efficiency Improvements

Meter Deployment Efficiency Enhancements	
Key Activity	Detailed Description
Improved Inventory Management	AMI Deployment developed additional process controls for inventory management at all Cross Docks in addition to monthly audits to ensure accuracy. The inventory module within Clevest, the application used to manage mobile and field operations, was also upgraded to improve the quality and efficiency of the meter inventory and handling processes. Among the enhancements were improved bar code scanning technology that auto-populated meter information (size, form, voltage) and real-time scanning of meters to allow stock to be rotated more quickly.
Multi-unit	Implementation of multiple-order appointment booking functionality has

Appointment Module	resulted in more efficient booking and dispatching of orders to fulfill customer appointments for meter exchange. This allows appointments in multiple-order buildings to be managed quickly and easily by Customer Service Representatives ("CSRs"), thereby improving service levels and the overall customer experience.
Technician Efficiency Reporting	Creation of dynamic, real-time reporting that tracks the productivity and efficiency of the Meter Deployment team versus targets, and effectively identifies areas for improvement and planning / workforce trends that need to be addressed.
Meter Fitting Jaw Gap Testers	Meter installers began using a gap tester tool to more consistently and accurately determine if unsafe meter fitting jaws (gapped jaws) are in place before installing AMI meters. Once an unsafe condition such as this is identified, the installation is not completed until a licensed electrician repairs the jaws in the meter fitting.
Improved Meter Deployment Planning	In 2015, the Meter Deployment Planning Team[26] implemented several process improvements that were incorporated during the creation of the detailed plan for 2016 installations. These improvements are anticipated to result in several benefits and improvements throughout the year, and include: • An increase in focus on completing every meter exchange within existing manual meter reading routes to more efficiently enable the meter reading organization to more effectively manage their declining resources. • A focus on completing all Wards and Towns in a more timely fashion by incorporating more of the relevant borders into the route selection and detail-level meter exchange plan. • The incorporation of historical cold weather impacts to field productivity and safety, resulting in a greater concentration of indoor work for winter months. • The leveraging of lessons learned regarding productivity, UTC rate, and other factors into more accurate planning of capacity and targeted completions (geography, seasonality, account history, etc.)

[26] Each year, beginning in the second quarter, the AMI Deployment Planning Team creates a detailed work plan for the meter installations that will be completed in the following year. This extensive process involves the selection, review, and assignment of each individual meter installation route to an installer on each working day, and serves as the baseline plan for comparison of deployment progress throughout the year.

AMI Operations

The AMI Operations team continued to take advantage of a growing set of tools and technologies that enable efficient, reliable, and proactive management of the expanding AMI footprint. This included the expanded use of data analytics, advanced reporting, automated system events, alarms, and notifications to quickly identify and resolve issues in the back office rather than through the use of less efficient field investigations.

AMI Operations also developed and began executing a "meter room remediation" process in 2015 that focuses on identifying multi-meter premises that are experiencing network communication challenges, and resolving those challenges as expeditiously as possible. This process includes reviewing available back office data via analytics tools and the AMI Head-end system, deploying mobile field resources to measure connectivity levels, and leveraging a variety of communications hardware solutions to establish consistent network connectivity. A majority of these multi-meter issues are now resolved within a month and are then able to consistently communicate with the AMI network. The remediation process contributed to an annual AMI meter read rate of 99.69% across the system in 2015.

In 2015, the team also enhanced the meter certification process so as to further reduce the meter certification timeline[27] from seven days down to four for meters communicating to the network after installation. This reduction was fully tested and vetted by the IT and AMI Operations Teams prior to being launched, and through ongoing monitoring of operations, this has proven to be an appropriate and reliable enhancement. This change has allowed ComEd and customers to take advantage of the capabilities of the meter sooner, while also reducing the number of manual meter reads and estimated bills and improving the system-wide meter read rate.

3. Customer Experience

Call Center Operations

The ComEd AMI Call Center reached the full-complement of planned resources during the second quarter of 2015 in alignment with the increased number of meters deployed. This group of dedicated customer service professionals continued to focus on working directly with customers to answer questions and inquiries related to AMI deployment, including setting appointments for meter installations and discussing the benefits that the technology enables.

Throughout the year, the team continued to drive improvement through education and training, including scheduling CSR visits in the field to gain first-hand experience with customers and providing customer-centric training courses for CSRs that focus on dealing with a diverse array of customer interactions. Additionally, the team has continued to focus on quality through the review of customer interactions by management. This review focuses on identifying trends and areas for improvement to enhance the customer experience.

[27] The meter certification timeline is the number of days needed to verify the proper operation of a newly installed meter, before ComEd will use wirelessly communicated data to generate bills.

A significant enhancement to the appointment scheduling process was implemented in 2015 when the team transitioned to the Appointment Scheduling Module within the Clevest work management tool[28] allowing for more efficient scheduling and execution of customer appointments. The team worked closely with AMI Meter Deployment (as mentioned above) to establish a framework for more effectively scheduling appointments in multi-unit buildings. These process and system improvements resulted in an improved customer experience, as the team was able to set and complete scheduled exchanges via more efficient and reliable appointments. Throughout 2015 over 97,000 appointments were scheduled and completed by the team.

Customer Experience

Along with the improvements noted above to Call Center Operations, the AMI Customer Experience team also was a contributor to the ComEd's improvement in overall customer satisfaction. Results have shown that satisfaction levels among those customers that have a smart meter are higher than those that do not. This is representative of the consistently positive experience that customers have in their interactions with the AMI program.

The ComEd Customer Experience team continued to partner with the ComEd Marketing team that is driving overall Customer Outreach and Education for the program, as is further detailed in Chapter 4 of this Report. The team again provided customers with supplemental information about the AMI program and the benefits available to them with the new technology. They also assisted with community outreach events that focused on the ongoing education of customers around the benefits of smart meters and that utilized proven facts to dispel rumors or myths customers may have regarding health concerns or data privacy. Additionally, as in previous years, before ComEd begins AMI meter installation in a new ward or municipality, a collaborative group of customer experience, management, and senior leadership personnel continued to drive face-to-face meetings with local elected officials to address issues or concerns raised by those leaders or their constituents. The collaborative team engaged with over 90 such groups in 2015.

Throughout 2015, the Customer Experience team focused on engaging directly with customers that have concerns about smart meters. When customers indicate that they wish to refuse their smart meter installation, the team worked directly with them to understand their concerns and work towards resolution. This included execution of the ongoing communication and education strategy to provide specific facts and additional information on the technology offered and the associated benefits of the program to all customers. Through these pro-active, customer-focused efforts, the team has seen a continued reduction in the overall net refusal rate from 0.15%[29] as of 2014 to 0.10% as of the end of 2015.

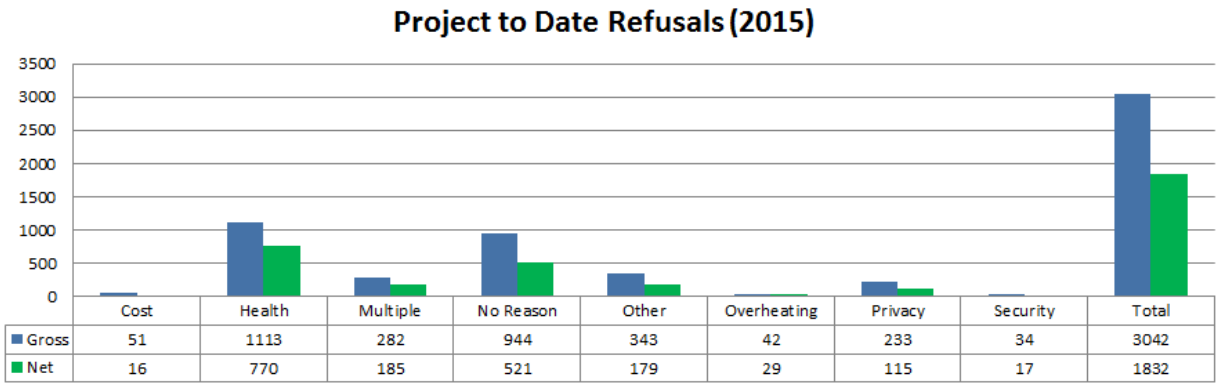
---

[28] Clevest is the work management tool used by the AMI Deployment team to plan, manage, track, and record daily installation work.

[29] Net Refusal Rate is reported as a percentage of meters installed since project inception. Additional information and statistics regarding Rider NAM can be located in Appendix B to this Report.

One significant result of this improvement was the increase in the rate of customers who changed their minds after speaking with a Customer Experience team member, which jumped from 33% in 2014 to 48%[30] in 2015. Additionally, the team implemented a specific outreach strategy for commercial customers that utilizes education and provides information most relevant to this segment of customers.

The figures below provide additional information on the nature of the customer refusals received and the rate of refusal throughout 2015. More detailed information on customer refusals can be found in Appendix B - Rider NAM Biannual Report.



	Cost	Health	Multiple	No Reason	Other	Overheating	Privacy	Security	Total
Gross	51	1113	282	944	343	42	233	34	3042
Net	16	770	185	521	179	29	115	17	1832

Figure 4 – Project to Date Refusals

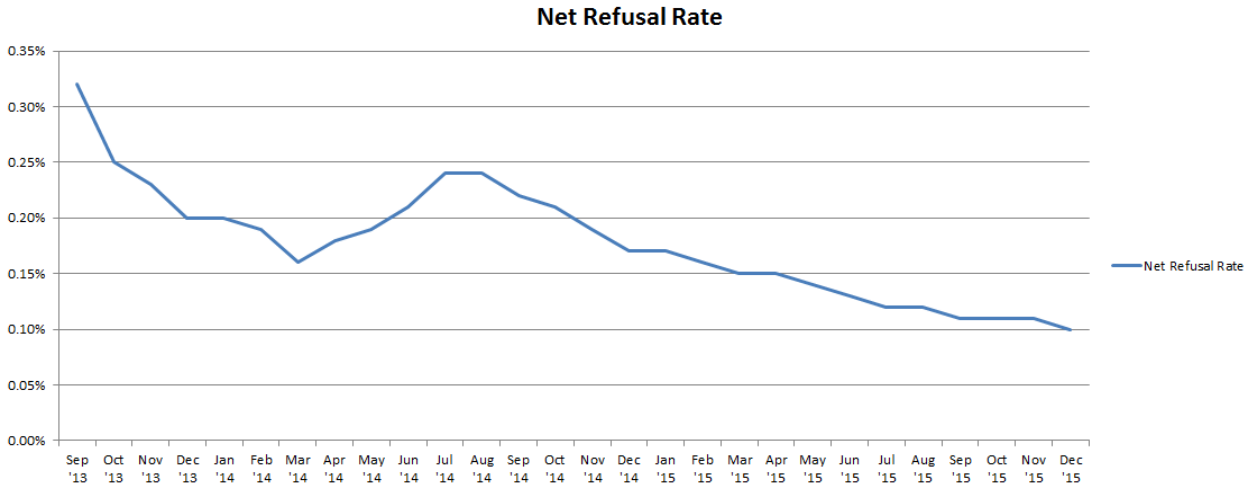


Figure 5 – Net Refusal Rate

[30] Of the 1,423 customers that initially refused a smart meter, 677 of them later agreed after speaking to AMI Customer Experience Personnel.

ComEd refiled the Rider NAM tariff in October 2015, with the Customer Experience team facilitating Commission and stakeholder acceptance. In Docket No. 13-0552, the Commission entered a final Order that required ComEd to refile Rider NAM after the fourth biannual report in order for the Commission to investigate the information in these reports and to determine if a different monthly meter reading charge was more appropriate.[31] After filing its fourth Rider NAM bi-annual report on October 1, 2015, ComEd refiled its Rider NAM tariff on October 30, 2015. Through the filing and supporting analysis, the team demonstrated to the Commission and to external stakeholders that the charge was serving its purpose successfully and continued to be to be reasonable and likely to deter meter refusals.

The team further verified that the Rider NAM charge was contributing to refusal rates that are among the lowest in the industry as well as demonstrating that on a cost basis, at the end of deployment the cost per read for manual meters would likely be even higher. ComEd, the Commission, and stakeholders agreed that there is no need to increase the fee. At the Special Open Meeting held on December 9, 2015, the Commission voted to not suspend the tariff and passed it to file.

4. AMI Information Technology ("IT") and Business Transformation ("BT")

The AMI IT and BT teams worked jointly to deliver significant transformational functionality in 2015. These accomplishments took the form of two large system releases[32], further build-out and integration of Outage Management capabilities, and additional enhancements in the areas of reporting, security, and operations. The progress made in these areas in 2015 represents the most impactful AMI-enabled functionality delivered to date for the ongoing transformation of operations and the realization of benefits by ComEd and its customers.

The sections below contain additional information regarding the functionality, tools, and other process and system enhancements that were delivered throughout the year. The sections are organized into the improved capabilities resulting from this work, including their link to specific benefits to ComEd and customers.

Outage Management

Throughout the year, significant improvements were made in outage management capabilities as ComEd continued to progress along the established Outage Management System ("OMS") Roadmap, including expanded integration with AMI systems. From an outage detection perspective, improvements were made to existing processes through the utilization of data made available by AMI technology. This information helps ComEd more effectively diagnose,

[31] Docket No. 13-0552, final Order (Feb. 5, 2014) at 4.

[32] As noted in the 2015 AIPR, the functionality delivery strategy for the AMI program breaks down the work required into specific "releases" that align with the desired AMI functionality and benefit delivery timelines.

validate, and subsequently prioritize outage events, particularly at the transformer-level in larger outage events.

System improvements were also made that resulted in more effective management of "nested" outages, in which two disruptions in power in an area have occurred. When a larger outage is restored, ComEd is now able to rely on AMI data to identify meters that should have been restored upon completion of corrective action but were not, identifying a new or "nested" outage for those meters that remain without power. Previously, due to a lack of available data and capabilities in the back office, ComEd may have resolved one of the outage issues (closer to the substation, for example) while not being aware that a second issue existed until an affected customer reported the continuing outage directly.

Functionality was also implemented in 2015 that allows for automated real-time status checking of AMI meters. When an outage is reported by a customer on ComEd.com, the system now automatically performs an on-demand status check ("ping") of the meter that includes verification of communication, a review of the operating status of the meter, and an instantaneous voltage read. The customer is then alerted of the results on the same screen used to report the outage, in real-time.

This functionality helps to reduce the amount of outage tickets and field orders that should not have been generated. The time required for back office manual processing and analysis is also reduced, lowering the number of unnecessary orders that are fielded which results in a reduction in truck rolls, and an improved and more interactive customer experience. Real-time status checking of meters has also been implemented via the ComEd Mobile Application. In addition, Customer Care representatives now have the capability to complete a meter status check when a customer calls ComEd to report an outage, and have the capability to review the history of meter status checks that were previously completed in order to help diagnose the situation.

In 2015 improved outage management capabilities enabled the avoidance of an estimated 19,375 truck rolls. Over 60,000 OMS trouble reports were generated via "last gasp" messages reported by AMI meters that are extremely valuable in determining the most efficient way to deploy resources in an outage situation. More active identification and verification of sustained outages also resulted in the generation of over 25,000 trouble reports to the OMS, allowing ComEd to pro-actively drive timely resolution. Continued improvements in outage management capabilities will drive improved reliability, reduced ComEd operating costs, and improved response time to storms and other outage events that impact the service territory.

Peak Time Savings Program

One of the more noteworthy accomplishments in 2015 was the launch of the Peak Time Savings program, which represented the culmination of several years of collaborative planning, system and business process implementation and integration, training, and internal and external communication. Peak Time Savings is a new AMI-enabled demand response program that pays customers a rebate for using less electricity during Peak Time Savings Event Hours when reductions in demand are sought. ComEd will credit participating customers' electric bills when electricity use is reduced during Peak Time Savings Event Hours, which typically occur between

11 a.m. and 7 p.m. on high usage days when most air conditioners are on, stores are open, and factories are running.

Customer communication and engagement enhancements were an important part of the launch of the Peak Time Savings program. Online enrollment in the program was enabled, as well as direct notification with customers regarding scheduled events. Event summary reports were launched that include the time and duration of the event and the associated savings that customers experienced as a result of participation. Additional details on the successful launch of Peak Time Savings enrollment and the initial Peak Time Savings event execution are included within Chapter 3 of this report.

Online Tools and Customer Care Center

There were also several important improvements to the Customer Care Center tools and processes that will drive a premier customer experience. This includes the launch of the Property Manager Portal, a new online tool linked from ComEd.com that enables direct control of energy service by Property Managers. Among other features, the portal allows property managers to maintain continuous service, request a meter service connection on behalf of a tenant[33], and send automated alerts when tenants stop service. The portal replaces the previous paper-based process that reduces the need for the Care Center to serve as an intermediary in the process. In 2015, approximately 1,000 Property Managers registered for a profile using the new tool and an estimated 63% reduction in this type of manual offline work has been experienced within the Care Center.

As more customers receive smart meters a corresponding increase has been realized in the enrollment in high-usage alerts via ComEd.com. Enrolled customers can now receive an alert via their email or mobile phone when their electricity usage is trending higher than normal. Online and mobile alert enhancements allow customers to take control of their energy usage and avoid surprises on their energy bills. Additional information on these features can be found in Chapter 3 of this report.

Financial Benefits

Specific functionality enabled in 2015 by the IT and BT teams will continue to drive the realization of significant benefits to ComEd and customers. The largest areas of benefit realization were in the core financial measurements that are central to the AMI business case, including reduction in CIM, Bad Debt expense, and UFE.

As a result of the IT and BT teams enabling the automation of the remote connect/disconnect switch and an expanding footprint of customers with AMI meters, significant progress was made in ComEd's performance in these areas. Prior to automation, use of the switch was processed

[33] This is completed only if the proper documentation and authorization is in place, in compliance with Part 280. All legal language and forms are provided to Property Managers to verify authority to act on their tenants behalf. Property Managers are subject to audit and review to ensure compliance.

manually in the back office, one account at a time, for move-ins and move-outs as well as to address past due payments, and usage at locations without an account holder.

Field Operations

The IT and BT teams also enabled technology, tools, and processes that resulted in improvements to field operations. These operational and efficiency improvements will continue to expand in alignment with the growing AMI footprint in the form of reduced costs and faster response time to field orders.

From a meter reading perspective, expanded AMI Deployment and improvements to the network monitoring and tracking tools were a major contributor to an annual system-wide read rate of 96.59%, which was the highest ComEd read rate on record. This increase in the percentage of meters read (via the AMI network or manually) contributed to approximately 500,000 less estimated bills to customers in 2015. These measurements will continue to improve as AMI is further deployed across the service territory, and as the tools and technology are enhanced.

Benefits to field operations were also realized as a result of the automation of the remote connect/disconnect switch and the use of alarms and alerts that provide the back office with information on the operating status and performance of AMI meters. As the AMI footprint continues to expand, more and more field orders that previously required a site visit can now be completed remotely. This leads to reduced labor costs, and improved customer experience through more timely resolution of issues.

Back Office Operations

The ComEd Billing Operations team also is experiencing improvements in performance as a result of the work completed by the IT and BT teams in 2015. Most notably, functionality was enabled to allow for the more efficient processing of Time of Use meters and billing rates. This included delivering capabilities required to validate the billing methods on these accounts within the Customer Information System ("CIS") when a change in billing method is applied, and enabling the calculation of on and off-peak usage for accurate billing.

The IT and BT teams also focused on leveraging additional capabilities of the Meter Data Management System ("MDMS") to improve bill accuracy and operational performance. This included transitioning certain accounts that had AMI meters away from a system that is scheduled for retirement and into the MDMS. The ability to validate, estimate, and edit billing data within the MDMS was also enabled, resulting in a more sophisticated tool capable of driving bill accuracy.

Functionality was also enabled to improve the reading and billing history on accounts, providing additional information and context for bill generation. Re-reads for accounts in which an unusually high bill is generated were also enabled in 2015, along with the ability to apply Peak Time Savings credits to customer bills in alignment with the launch of the first round of events in 2015.

The team completed improvements to the dashboard reporting tool, further empowering the PMO to more efficiently and transparently communicate the results of meter deployment on a day-to-day basis. Two software upgrades to the updated version of Utility IQ ("UIQ"), the SSN AMI head-end system used for AMI network monitoring and operation, were executed by the IT team, with support from the AMI Operations team. The IT team also worked with AMI Operations throughout the year to complete firmware upgrades and other operational enhancements required by AMI meters and supporting systems.

Emerging needs and requirements from the AMI Deployment and AMI Operations teams were addressed in 2015 as well. These included performance improvements to the AMI network and enhancements to the Detectent[34] solution for data analytics. These enhancements continue to contribute to more efficient back office processes, and limit the number of unnecessary truck rolls based on specific criteria for meter events and alarms. These enhancements also reduce the number of estimated customer bills generated through quicker resolution of network communication problems.

Security of Data and Systems

During 2015 the IT team continued to focus on driving robust redundancy and security of systems and networks. This included ongoing testing for the continuous operations of the SSN network and supporting systems, and continued improvements to system security in accordance with industry standards. Emerging requirements associated with the secure sharing of interval data usage to third-parties were also addressed throughout the year.

Residential Meter Usage Data ("RMUD")

Enhancements to the delivery of interval energy usage data to Retail Electric Suppliers ("RES") were delivered by the IT and BT teams in 2015 in alignment with Rider RMUD. Under this Rider, ComEd provides interval meter data to RES for their customers who are provided a time of use or demand-based billing option. Automated enrollment was enabled in 2015, along with the delivery of 60-minute interval data and new capabilities that allowed for the more efficient identification, reporting, and ongoing management of the related customers and RES.

Functionality Release Approach

The functionality and capabilities described above were incorporated into the over-arching system and business functionality delivery strategy. This strategy focuses on driving maximum

[34] Detectent is a business intelligence and data analytics company headquartered in California and was recently acquired by SSN (January 7, 2015). ComEd is using Detectent software, recently re-branded as "Operations Optimizer" and algorithms to monitor the health and performance of the AMI network and related equipment, examine meter outage events and last gasp messages, meter alarms, meter voltage levels to ensure safe and regular levels at the customer premise, and to ensure the accuracy of billing data to prevent inaccurate bills to customers, among other analytics metrics. This tool also helps to identify cases of energy theft exists within the system based on data trends and usage patterns.

benefit realization while minimizing risk in alignment with the established business case targets. The following figure provides a summary of the completed functional releases, including in April (Apollo) and October (Bia) of 2015.

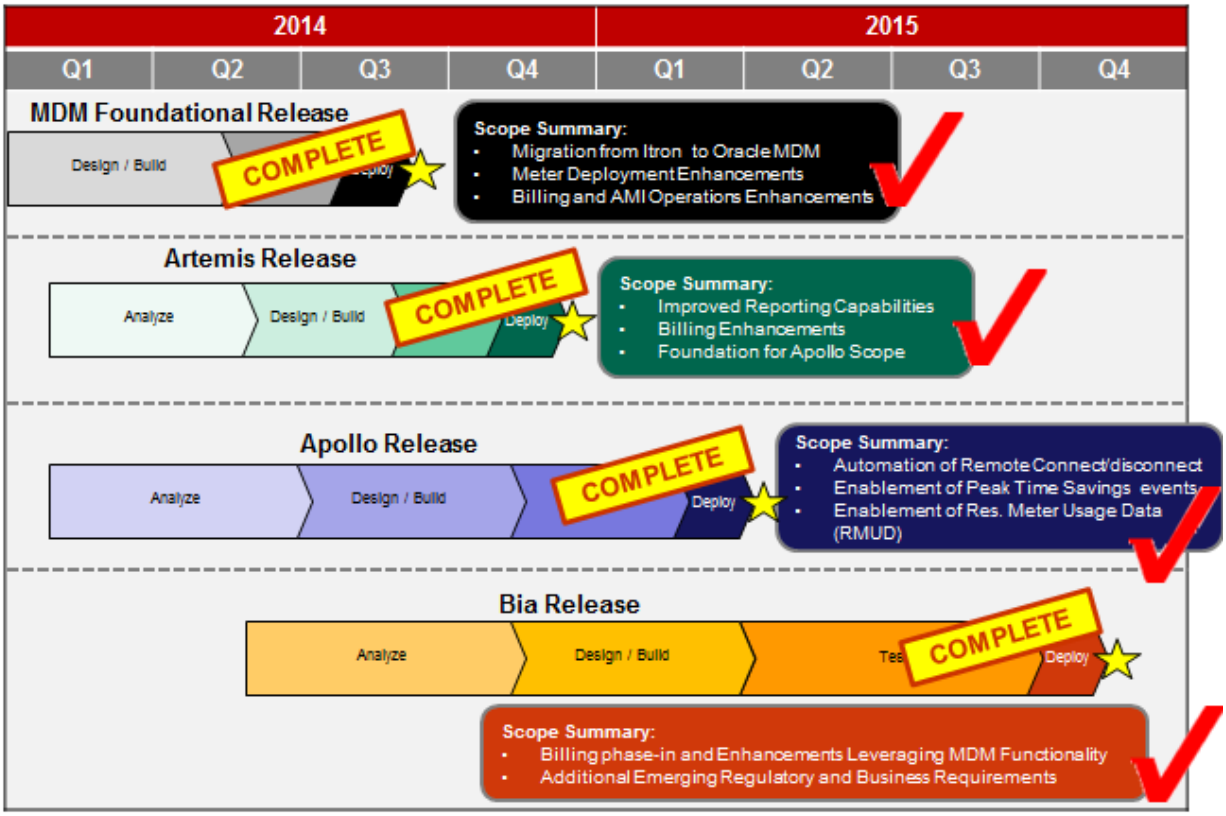


Figure 6: AMI Functionality Release Schedule

As was the case for the system releases in 2014, the delivery of Apollo and Bia was executed through a coordinated effort by the IT and BT teams, with close interaction and participation from the impacted business areas across ComEd. Activities included gathering business and technical requirements and developing future-state business processes, as well as solution design and build-out for the delivery of the requirements, business processes, and functionality.

The IT and BT teams worked closely with impacted ComEd users to plan and execute a rigorous test plan to ensure that the solution built met the desired technical and business requirements, and that these changes would not adversely impact existing ComEd systems and processes. Lastly, a comprehensive Business Readiness process was executed prior to the Go-live of each major release; this process consisted of the identification and tracking of ~200 individual tasks that needed to be completed, and formal readiness sign-off by the impacted groups.

The IT and BT teams also completed strategy, planning, and design for future work scheduled for delivery in 2016 in parallel to the activities described above. These future activities will focus on the delivery of additional functionality and system enhancements, drawing from the requirements and future state AMI business processes that were identified by the BT team via

working sessions with key ComEd process owners. Details on the plans for 2016 are contained within the 2016 Activities and Goals section of this report, further discussed below.

5. Change Management and Business Readiness

Communications

Throughout 2015, the Change Management team continued to develop and deliver internal program communications that drove awareness of the AMI program prepared ComEd employees for the changes to their existing business processes. To drive mutual understanding across the organization, the team continued to create field alerts and job aids as well as to provide executive-level internal communications throughout ComEd. The team also proactively communicated critical information and updates to the organizations impacted by the key functionality delivered by the IT and BT teams throughout 2015. To drive efficient and effective communications throughout ComEd, the Smart Meter-Enabled Transformation ("SET") team brought new life to their internal website ReadySetGo.ComEd.Com through the launch of the SET Knowledge Center.

The team was also responsible for driving communications within the AMI Deployment program execution team, including field and project management personnel. These communications included executive status reports, general communications surrounding the completion of milestones or other program accomplishments, and key communications and updates surrounding the delivery of new AMI functionality and tools. In 2015, the Change Management team delivered 279 communications that helped to maintain effective cross-functional communication and understanding for the efficient planning and execution of work.

Employee Engagement

The Change Managements team hosted kick-off events in both the Crestwood and Skokie operating areas, consistent with prior practices. The team also hosted various engagement events for the centralized business units located within Lincoln Center, which allowed the Change Management team to interact with employees that are not directly affected by the AMI implementation. These engagement events were focused on creating awareness for day-to-day impacts to employees as a result of AMI deployment, which were communicated via job aids, alerts, and impactful and engaging question and answer sessions with a wide range of employees.

Figure 7: Crestwood Operating Area deployment kick-off event held to educate

Throughout 2015, the Change Management team continued to engage with each new Operating Area in multiple ways outside of the kick-off events detailed above. The engagement activities began with AMI Change Management team leadership attending meetings with each business unit within the Operating Area to spread awareness of the coming changes. The Change Management team also reviewed the current curriculum with leaders in each new Operating Area before distributing to the employees at the beginning of full deployment. One month into deployment, the Change Management team hosted the kick-off event mentioned above.

The Change Management team would then check-in with the newly deployed Operating Area 90 days after the launch of deployment in order to keep track of the status and operational impacts. The team also continues to attend morning meetings in all currently deployed Operating Areas to distribute Change Readiness pulse surveys (6 months after deployment and then every year after that) and to answer questions from employees in the field. This level of engagement has resulted in a more informed workforce, which is able to operate safely and efficiently within the newly deployed AMI environment. The Change Management team collected over 1,200 change readiness surveys throughout the AMI footprint in 2015.

Training

Training sessions executed by the Change Management team in 2015 were aimed at adequately preparing the impacted groups within ComEd for the impact of the continued execution of the AMI program. Along with effectively rolling out AMI-related communications across ComEd in 2015, the Change Management Team was responsible for the design and delivery of the ongoing formal training program for impacted field and project management personnel.

During 2015, the team trained 567 employees from various business units through the Apollo release in April 2015. Training also was conducted with a sub-set of the Billing Management Team in 2015 for the Bia release, with the larger group training commencing in 2016. This pilot program included facilitating 72 Instructor Lead Training Classes for the Customer Experience team, Billing, New Business and Customer Care Center business units. In addition to the training programs, the Change Management team developed and delivered 77 field-related communication alerts and developed 46 job aids focusing on specific actions, changes to process, or updates that directly impacted day-to-day operations of the AMI project team or other

departments within ComEd. The result of this thorough approach will be a ComEd workforce that is adequately trained and continually engaged with regarding the results and progress of AMI Deployment and the desired benefit realization goals. This will drive safe, effective, and efficient work practices in the field and back office.

B. 2016 Activities and Goals

In 2016, ComEd will continue to build on the momentum established by the consistently successful program execution in the field and back office. The updated meter deployment plan calls for the completion of 1,003,200 exchanges in 2016, which will leverage existing staffing levels while remaining focused on safe and high-quality processes. These planned exchanges include the completion of the Chicago Loop area, building upon the initial installations completed there in 2015. Additionally, the team will complete the AMI network design and build activities for the entire service territory.

The IT and BT teams will collaborate to implement additional outage management capabilities, while also continuing to enhance elements of field and back office operations such as billing, PTS program expansion, field order generation and processing, and improved system architecture and security. These efforts will enable ComEd to continue to realize benefits in alignment with the business case and leverage data to drive ongoing operational improvements and efficiencies.

Providing a premier customer experience will remain a focus for ComEd throughout 2016. The AMI Customer Experience and Customer Education and Outreach teams will continue their efforts in alignment with the expanded AMI footprint while enhancing and adjusting processes to ensure that customers are getting the information and support needed to fully leverage the available tools and functionality. Similarly, the Change Management and Business Readiness team will continue to ensure that internal communication, education, and awareness are rolled out to the new areas where AMI is deployed throughout the year. The following sections provide additional details on the project work that is planned to be completed by the AMI team in 2016.

1. Project Management Office

The PMO will remain focused on management of program scope, schedule, budget, issues, and risks. This team will also manage and oversee contractor scope and refine and leverage the AMI Program Dashboard for overall tracking and progress reporting. Active management of the AMI Network Governance Committee will remain a priority for the PMO in 2016, and will include the evaluation of additional uses for the AMI network. ComEd will continue implementing a conservative approach to the expanded use of the network and will not allow any new uses or enhancements that compromise core functionality.

2. AMI Network and Meter Deployment

ComEd has safely and efficiently deployed AMI technology at levels higher than what was planned in each year of the program. As a result of these sustained productivity levels, the team has adjusted the targeted annual meter deployment volumes for the rest of the program. In

alignment with the principles established in previous AMI filings, these adjustments have been made to drive the most efficient staffing levels and associated ramp-down of resources over an extended period of time, while still completing the work on-time and on-budget. The adjusted annual deployment volumes for the remainder of the program are in the table below.

Table 5: Remaining Meter Exchanges

Year	Remaining Meter Exchanges	
	2015 AIPR	Updated
2016	930,000	1,003,200
2017	930,000	830,000
2018	572,639	506,559
Total	2,432,639	2,339,759

As noted in the table, targeted installations have increased for 2016 and reduced in 2017 and 2018. The increased target in 2016 allows ComEd to maintain the peak meter deployment and staffing levels achieved in 2014 and sustained throughout 2015. The decreased targets in 2017 and 2018 reflect the established goal of an extended ramp-down period. Ramping-down the deployment volume in this way allows for the pragmatic absorption of field and management resources that will be leaving the program as it nears completion, rather than having a larger number of resources rolling off at specific points in time. This steady and extended plan for the ramp-down also allows the management and planning functions to maintain the flexibility required to react to the anticipated challenges associated with completing all meter exchanges throughout the service territory in an efficient manner.

The team plans to complete the design and deployment of all AMI Network devices throughout the entire service territory. This will include the completion of design in Freeport, Crystal Lake, Dixon, DeKalb, and Streator, as well as network device deployment in those Operating Areas along with University Park, Bolingbrook, Elgin, Aurora, and Joliet.

The AMI Meter and Network deployment teams will be working collaboratively to execute the installation of devices and meters in the Chicago Loop (within the Chicago North Operating Area) throughout 2016, building upon the learnings established via the soft launch in 2015. The AMI Network team will continue to perform building structure assessments and will complete designs on a building-by-building basis in close coordination and alignment with the planned installation efforts of the AMI Meter Deployment team. The teams will collaboratively review communication levels by leveraging real-time data analytics tools to identify gaps and deploy targeted field solutions to refine and eventually optimize the AMI mesh network in the Loop area.

The team will build upon the strong track record of completing meter exchanges in a safe, high-quality, and efficient fashion as the AMI footprint continues to expand in 2016. Driving a premier customer experience supported by ongoing collaboration across the diverse AMI team and the ComEd organizations impacted by this transformative program will also remain a priority.

3. Customer Experience

The Customer Experience team will continue to support customer inquiries, schedule meter installation appointments, and handle escalated customer issues in 2016. Execution of the Rider NAM (meter refusal) process will continue, along with support of customer outreach events through direct customer engagement and creation or refinement of informational materials. From a staffing perspective, the ComEd AMI Call Center will continue to operate at the fully-staffed level and will further optimize resources in alignment with the planned deployment volume.

4. AMI Information Technology and Business Transformation

Outage Management

A main focus for the IT and BT teams in 2016 will be the further enablement of outage management functionality. Along with overall system enhancements that will further enable an expanded volume of AMI data, the team will develop an improved capability to effectively respond to nested outages that are identified.

As an example, when an outage is currently confirmed to have been restored, a large system file is generated and processed, and an outbound call is delivered to customers informing them that they have been restored. Functionality delivered in 2016 will take advantage of AMI data to determine where nested outages exist, and will remove those locations from the customer call list to avoid falsely communicated restorations.

The team will also continue to expand the real-time status checking of AMI meters. Along with the online, mobile application and CSR capabilities enabled in 2015, the team will incorporate real-time status checking and feedback into customer contacts initiated via text message and through the interactive voice response ("IVR") system. This functionality will continue to reduce the amount of outage tickets and field orders that should not have been generated in the first place, while also providing customers with immediate feedback on the status of their account.

Peak Time Savings

As the Peak Time Savings program continues to expand in 2016, the IT and BT teams will provide support, testing, and ongoing enhancements to systems and processes. This will include improved processing of bill credits, management of the enrollment/de-enrollment processes, enhancement of bill presentment, and build-out of reporting capabilities. These enhancements and the anticipated increase in participation will position ComEd customers for bill savings and expanded control of their energy usage.

Billing Operations

Several enhancements to Billing Operations are planned in 2016, including further refinement of MDM end-user functionality, expanding processing capabilities to avoid estimated bills, and the enhancements tied to the PTS program expansion mentioned above. These improvements will result in more efficient processing of billing-related work and an overall reduction in the number of estimated bills generated.

Additional Enhancements

Improvements are also planned for 2016 that will impact meter operations and maintenance, building upon the key functionality delivered in 2014 and 2015 and leveraging the proven system and business functionality delivery strategy. These include improvements to remote connect and disconnect order generation and processing, improved workflow for AMI Operations, data synch and meter exchange and certification enhancements, and system architecture refinement. A high priority will continue to be placed on security of systems and networks, including testing for continuous operations of the SSN network, continued improvements to system security, and secure sharing of interval data with third-parties in accordance with industry standards and the associated regulations. The team will remain aligned with the impacted business areas in a collaborative focus on enabling benefit realization to ComEd and customers.

5. Change Management and Business Readiness

In 2016, the Change Management and Business Readiness team will continue to support the AMI program through the changes that result from shifting to an AMI operating environment, including the onboarding of new Operating Areas into the AMI footprint. The team will focus on preparing and training impacted employees to properly utilize new tools and processes effectively in the context of their day-to-day jobs. The Change Management and Business Readiness team will also continue to proactively communicate critical information and updates to the organization throughout 2016, including key program milestones achieved and the value to the customer and ComEd that result from the AMI program. During 2016, the Change Management and Business Readiness teams will focus on continuing additional outreach to ComEd employees, continuing to create job aids and field alerts, and continuing executive-level communication throughout the organization.

C. Budget

The following section contains the budget tables updated with 2015 actual results, along with the associated variance explanations for Capital and Operations and Maintenance (“O&M”). The changes in projected deployment volume resulting from favorable results in 2015 result in a shift in some elements of the Capital and O&M spend profile.

Table 6: Capital and O&M Spend Profile AMI Deployment

Capital[35] ($M)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
2015 AIPR Budget	0.3	42.6	151.6	242.5	191.7	172.9	126.9	16.4	4.1	4.2	953.2
Updated Budget	0.3	42.6	151.6	243.6	239.1	163.0	90.7	15.7	4.1	4.2	954.8
Variance (Increase) Decrease	-	-	-	(1.1)	(47.4)	9.9	36.2	0.7	-		(1.6)
O&M ($M)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
2015 AIPR Budget	18.4	29.3	45.1	62.0	63.2	64.5	70.9	46.9	46.4	47.3	494.0
Updated Budget	18.4	29.3	45.1	59.9	65.6	66.1	69.4	46.8	43.9	48.7	493.2
Variance (Increase) Decrease	-	-	-	2.1	(2.4)	(1.6)	1.5	0.1	2.5	(1.4)	0.8

From a Capital perspective, the actual spend in 2015 was $1.1M more than previously planned; this was a result of the net impact of an increased volume of meter deployment, and reduced spend in other program areas. Adjustments to the projected spend in 2016 – 2018, compared to the previous plan, are associated primarily with the shifting of meter deployment volume in those years (as discussed in the Meter and Network Deployment sections of this report). The shift in Capital spend is also a result of pulling forward additional purchases of meters, materials, and other equipment from 2018 to 2016 to increase the inventory levels on hand in order to align with management objectives and mitigation of supply risks. The $1.6M variance in total Capital spend indicated in the table is related to AMI IT costs that were previously budgeted for other EIMA projects but have been re-categorized within this category of spend. The overall spend for the program remains flat to the values previously communicated.

[35] The total spend amount captured in the table does not include costs associated with the Peak Time Savings (PTS) program, which is consistent with prior AIPRs.

From an O&M perspective, the actual spend in 2015 was lower than the planned amount by $2.1M, primarily resulting from an adjustment to the work plan for completing electrician repairs[36]. Over the life of the program, the net effect of the small adjustments to projected annual O&M budget is a decrease of $0.8M.

As noted in the 2015 AIPR, the O&M budget for the program supports the estimated volume of repairs to customer-owned equipment focusing on the safety of customers and the safe, quality installation and ongoing operation of AMI meters. Completion of repairs of this nature will go on throughout the deployment period in alignment with the high-priority and importance that is placed on the safety of the customer and the installation workforce. The team continues to review and assess the costs associated with these repairs to drive prudency and efficiency.

There are several Pilot programs and other initiatives that were launched or expanded in 2015, with similar programs planned for 2016. These include, among others, Smart Streetlights, Bidgely Real-time Pricing, Voltage Optimization, Smart Thermostat Control program and the exploration of leveraging the AMI network for Smart Water Meters in the service territory. While these programs are enabled by the AMI technology that has been and will continue to be deployed by the AMI team for the duration of the program, they are not being driven by the AMI program resources, nor are they funded by the established budget for AMI deployment. Each of these initiatives have specific project teams, scopes, milestones, and budgets. It is important to note that active collaboration and communication does take place between the AMI program team and the groups responsible for these programs in cases where there may be cross impacts, including via the AMI Network Governance process that is described in the PMO sections of this chapter. However, ultimate accountability and management of budget is outside of the scope of the AMI Deployment effort.

D. List of AMI Investments

The AMI investments undertaken in 2015 and scheduled under the Current Plan for 2016 are set forth in the table below:

Table 6 – List of AMI Investments

($ in 000's)	**2015 (Actual)**			**2016 (Projected)**		
Category	**Capital**	**O&M**	**Total**	**Capital**	**O&M**	**Total**
Meters	196,378	18,479	**214,857**	205,004	18,750	**223,754**
Communication System	13,946	6,771	**20,717**	15,675	8,832	**24,507**

[36] The work plan adjustment was due to a delay in availability of the UL certified dual-ohms solution referenced in the AMI Network and Meter Deployment section of this chapter.

IT Applications and Operations	28,895	18,572	**47,467**	15,401	20,934	**36,335**
Project Management and Other Costs	4,393	16,034	**20,427**	3,012	17,133	**20,145**
Total	243,612	59,856	**303,468**	239,092	65,649	**304,741**

2015 – Actual Spend

Meters

The meter costs for 2015 were primarily related to the purchase and installation of meters. Other costs include tools and other materials associated with meter installation, meter inventory management, and electrician repairs to customer-owned meter-related equipment.

Communication System

The Communication System costs for 2015 were primarily associated with the purchase and installation of field network equipment for the deployment of the AMI communication system. This category also contains charges for the AMI technology provider SSN, including materials, maintenance of the required SSN IT hosting environment, professional services support, software fees, and server costs.

IT Applications and Operations

IT Applications and Operations costs for 2015 included the automation of the remote connect/disconnect switch and enhancements to the Peak Time Savings program for execution and ongoing management of Demand Response events. In addition, these costs included the delivery of other key functionality and system enhancements as described in this report. Further, costs were incurred for ongoing IT maintenance of the hardware and software used to support the operation of the AMI meters installed and the associated data analytics.

Project Management and Other Costs

The Project Management and Other Costs for 2015 were related to project management activities, contractor management efforts, operations of the meters installed, meter deployment planning, ongoing planning and execution of customer experience activities, and business transformation and change management activities. Additional cost components included ongoing planning and rollout of customer outreach and education activities and labor costs for revenue assurance work.

2016 – Projected Spend

The cost categories described below contain costs that vary with the volume of meters installed. The types of labor and material projected in 2016 will include, but are not limited to, meters, labor, hardware, software, and communications equipment.

Meters

The meter costs for 2016 primarily relate to the purchase and installation of meters. Other costs include tools and other materials associated with meter installation and meter inventory management, along with electrician repairs to customer-owned meter-related equipment.

Communication System

The Communication System costs projected for 2016 relate primarily to the purchase and installation of field network equipment for the deployment of the AMI communication system. This will also include charges for SSN, including materials, maintenance of required SSN IT hosting environment, professional services support, software fees, and server costs.

IT Applications and Operations

Projected IT Applications and Operations costs for 2016 will be related to ongoing enhancements to Outage Management, expansion of the Peak Time Savings Program, Billing enhancements, and ongoing enrichment of the existing AMI systems and functionality. Additionally, costs will be incurred related to the ongoing IT maintenance of the hardware and software used to support the operation of the AMI meters installed and the associated data analytics.

Project Management and Other Costs

The Project Management and Other Costs for 2016 will continue to be incurred for project management activities, contractor management efforts, operations of the meters installed, meter deployment planning, ongoing planning and execution of customer experience, including the call center and customer relations, and business process redesign and change management activities. Additional cost components are related to ongoing rollout of customer outreach and education activities.

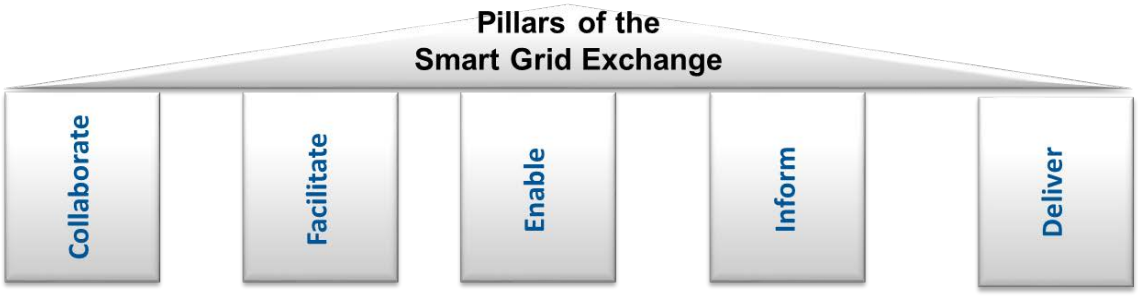
III. Customer Applications

A. Introduction

ComEd is continuously moving towards a future-oriented utility model and customer ecosystem. As the rollout of more than four million smart meters throughout ComEd's service territory progresses, more and more ComEd customers are benefiting from the innovative technologies, programs, and cost savings that are enabled by the smart grid. ComEd has committed to bring forth additional products and services that will help customers realize and increase the tangible value they can get from a smart meter.

ComEd launched the "SmartGridExchange[SM]" initiative (SGE) in 2014 to further support its effort to identify, evaluate, and implement new and promising solutions that leverage AMI and AMI-related technology. This highly collaborative initiative invites key stakeholders to jointly shape a dynamic customer experience. The SGE focuses on developing collaborations with manufacturers, developers, entrepreneurs, technology start-ups, universities, and students in order to continually search for ways to deliver smart grid and smart meter-enabled benefits to our customers.

In 2015 — the second year of the SGE — ComEd evaluated, implemented, and expanded a number of programs. The collaborations and initiatives under the SGE helped explore, design, and shape the development of products and services that take smart grid and smart meter-enabled technology into the home that give customers more control and additional saving opportunities.



Specifically, ComEd worked to:

- **Collaborate** – Collaborate with developers who have technologies or concepts that could bring value to customers. For example, the Smart Meter Connected Devices service connects customers to a platform of meter-connected devices offered by different vendors.

- **Facilitate** – Facilitate customers' ability to access new cutting-edge products, tools, and services on the marketplace that could yield energy savings and/or more control over their energy use or convenience. In 2015, ComEd launched a Thermostats Pilot with Comcast Xfinity and Nest to offer eligible customers innovative demand response and energy-saving features offered by smart thermostats owned by the customer.

- **Enable** – Support third party development of new applications, products, and services that could run on ComEd's platform, as well as on vendor and contracted third party platforms. One such initiative ComEd will be launching is Green Button Connect, which allows customers to automate the transfer of their usage data to authorized third parties, based on affirmative (opt-in) customer consent and control.

- **Inform –** Increasingly serve as a hub for information that offers our customers and the marketplace a convenient portal where they can learn about and share information regarding new and developing energy products and services; ComEd seeks to serve as an online clearinghouse for information as well as provide information to stakeholders, industry, and customers through initiatives such as the SGE Forum.

- **Deliver** – Where possible, provide products and services directly to interested customers, including Peak Time Savings and Hourly Pricing (formerly Residential Real Time Pricing)

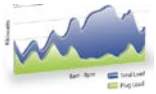
Through ongoing market scans and ideation sessions, the SGE aims to serve as a birthplace of emerging technologies, offerings, and collaborations. The SGE initiative has continued to introduce, evaluate, and advance new ideas and potential pilots while deploying existing in-market initiatives and programs. ComEd has continued regular market assessments of industry developments and to identify products and solutions with potential for piloting or collaboration under SGE. Promising technologies and initiative ideas that have been vetted are continuously added to the SGE initiative pipeline to monitor, evaluate, and charter new projects and pilots.

As the smart meter rollout continues to progress in 2016, more and more ComEd customers will benefit from the innovative programs, technology and cost savings enabled by the smart grid. In 2016, ComEd will continue its efforts in deploying in-progress and planned new products and services. ComEd will further demonstrate the value of the smart grid unlocking more choice and control for customers by exploring promising potential offerings such as an Energy Marketplace and a Smart Thermostats Control program. As ComEd delivers on the benefits of the smart grid through SGE initiatives, ComEd will continue to conduct regular technology research to survey new opportunities in the market and address emerging customer trends, and continuously review new concepts and initiatives.

B. 2015 Activities and Accomplishments

ComEd undertook a series of efforts in 2015 targeted towards delivering value to our customers through the SGE initiative and other important AMI, energy efficiency, and demand response products and services. ComEd continued to build on existing offerings or launched the following smart grid-related pilots and projects:

2015 Activities			
Enabling Customer Choice and Control	Peak Time Savings ("PTS")	Opt-in demand response program offered to residential customers with smart meters that pay enrolled customers for using less electricity on select summer Peak Time Savings Hours when electricity demand is typically high.	
	Hourly Pricing	AMI-enabled enhancements to this dynamic pricing option that lets residential customers pay a charge based on the hourly market prices for electricity.	
	Home Energy Advisor	Analyzed current energy advisory capabilities and explored concept to provide home energy advisory capabilities to offer customers personalized recommendations. Incorporating concepts into future web enhancements.	

	Rider Residential Meter Usage Data (RMUD)	Deployed enhanced functionality to RMUD, which enables Residential Electric Suppliers to offer Time of Use, demand response, and dynamic pricing products to their supply customers.	
	Green Button Connect	Begin allowing customers to automate the transfer of their usage data to authorized third parties, based on affirmative (opt-in) customer consent and control.	
	Electric Vehicles (EV)	Deployed EV charging points and encouraging adoption of EVs.	
	Improved AMI Outage Alerts	Improved the customer experience with outage alerts through easier enrollment through multiple channels, as well as integration of meter status check.	
Energy Efficiency Through Innovation	Xfinity Home and Nest Pilot	Expanded the AC Cycling program offering to include both Nest and Xfinity Home thermostats for customers to earn $40 during the summer season.	
	AMI AC Cycling Switch	Explored the possibility of utilizing AMI enabled two-way AC Switches to improve customer benefits on the AC Cycling Program.	
	Smart Meter Connected Devices	Continued growing platform allowing customers to connect devices to their smart meter to view real-time energy consumption.	
	Smart Streetlights	Deployed a smart LED streetlight solution leveraging ComEd's smart meter communications network.	
	DETech Enterprise Plug Load Management	Evaluated the customer benefits of plug-load appliance energy management for commercial use.	
	Bidgely Pilot	Opt-in program deploying Bidgely's platform to provide customers with a breakdown of energy cost associated their appliances.	
	MeterGenius Pilot	Pilot providing customers access to the MeterGenius web platform and mobile app, which allows participants to view their electricity consumption data, set an energy budget, receive tips on reducing usage and earn rewards.	

	Water Heater Efficiency and Metering	Explored and evaluated water usage efficiency and water heater manager offerings.	
Collaboration	Grid Enhancement Retailer	Explored ways to connect customers with energy-saving products and services through an online Energy Marketplace concept	
	SmartGridExchange[SM] Forum	Hosted forum with thought leaders and stakeholder groups in the Illinois community aimed at sharing, debating, features and principles that can strengthen the SmartGridExchange[TM]	
	Local Developer Collaboration	Continued to collaborate with the Illinois Energy Foundry, a nonprofit venture fund fostering the development of innovative smart grid-related businesses in Illinois	

1. Enabling Customer Choice and Control

In 2015 ComEd introduced a suite of programs, tools and products that leverage AMI technology to deliver greater choice and control.

a. Peak Time Savings ("PTS")

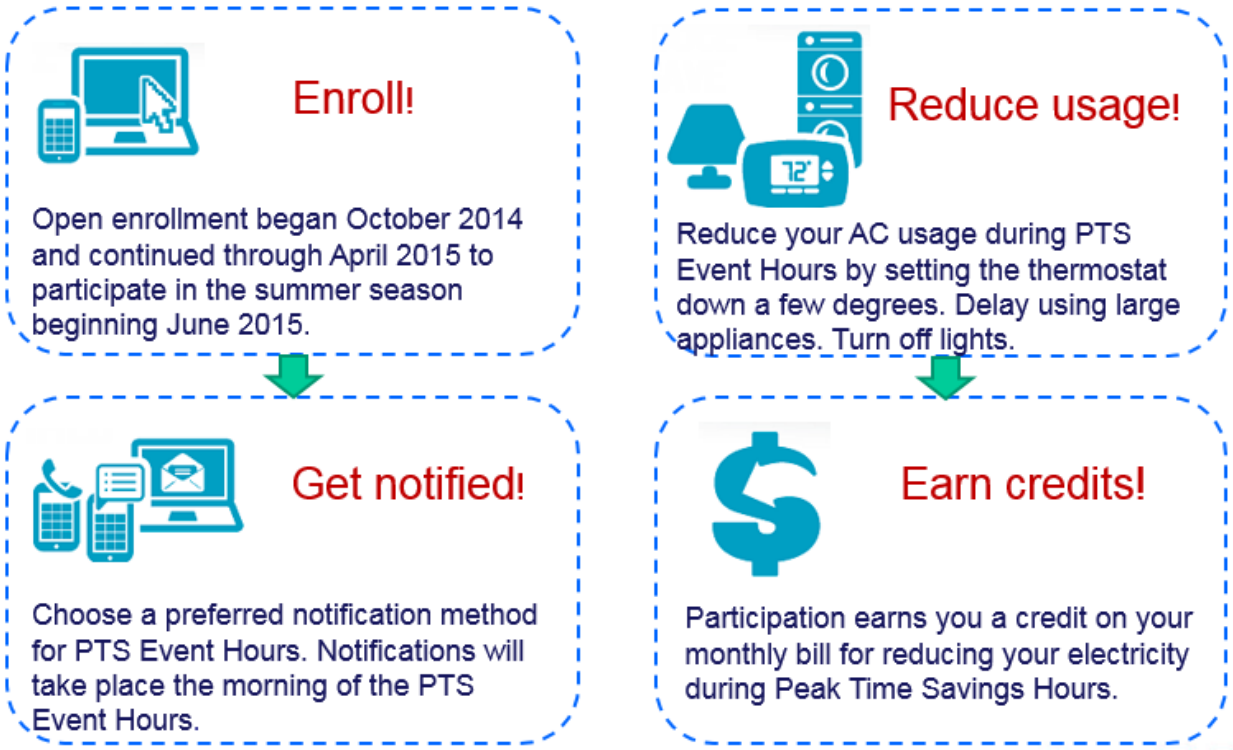
In October 2014, ComEd launched enrollment for Peak Time Savings (PTS)[37] – an opt-in demand response program offered to all residential customers who have smart meters. PTS pays customers for reducing energy use on select summer Peak Time Savings Event Hours. There is no cost to enroll and no penalty or payment if customers enroll and choose not to reduce usage during an event. The program, a first-of-its-kind program to be offered to customers in the Midwest, pays enrolled customers for using less electricity on select summer Peak Time Savings Event Hours when electricity demand is typically high. Customers who reduce energy use receive credits on their next bill: $1.00/kWh rebate for energy that a customer avoids during PTS events.

Smart meters are a key part of ComEd's effort to show customers the value of a smart grid-enabled future, and PTS offers a tangible benefit to the consumer from ComEd's AMI investment. PTS encourages customers to use less electricity during high-demand times, when most air conditioners are on, stores are open, and factories are running. Managing high-demand periods can help reduce the need for additional generation capacity as well as potentially lower

[37] The Commission approved ComEd's proposed Rider PTR – Peak Time Rebate ("Rider PTR"), marketed to customers as the "Peak Time Savings" or "PTS" program, in ICC Docket No. 12-0484.

emissions due to reduced loads, help reduce the overall cost of electricity supply, and lessen the burden on the electricity delivery system, all while saving customers money.

How Customers with a Smart Meter participate in Peak Time Savings:



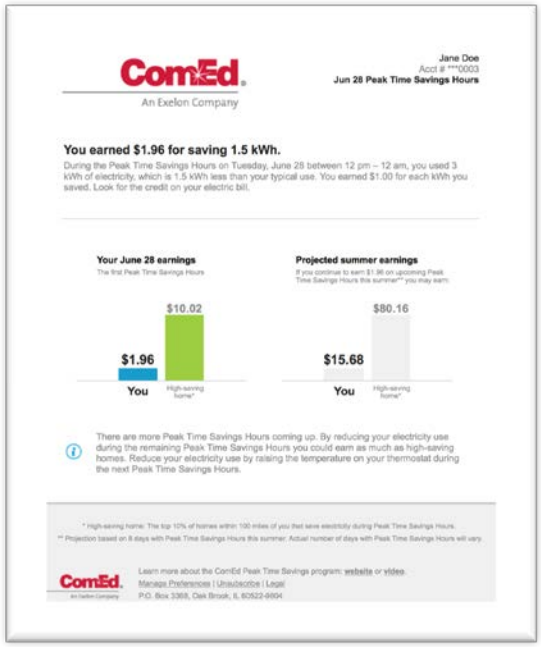
2015 was an electrifying year for Peak Time Savings with strong customer recruitment success as well as completion of the inaugural event season of the program. Effective customer recruitment was heavily driven by the 2015 marketing campaign, which included bill inserts, monthly mailings to eligible customers and a Smart Appliance giveaway (See Chapter IV). Within three months of program launch, more than 20,000 customers enrolled. 56,529 customers participated during the summer 2015 season, making Peak Time Savings one of the most successful program launches in ComEd's history.

ComEd announced the first-ever Peak Time Savings event on July 23rd, 2015. Six Peak Time Savings Events were announced in 2015, totaling 20 event hours. Three of the event days included only Direct Load Control (DLC) Pilot participants. Total bill credits earned across all events was $386,867, while on average, each customer's cumulative earned bill credit was between $8 and $9.

Pre-Event Notifications:

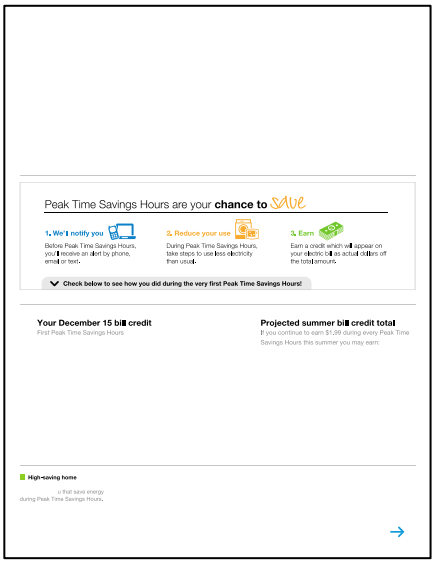
Customers are notified the morning of PTS Hours through their preferred notification channel(s) of phone, email, or SMS alerts. Pre-Event notifications provide customers with personalized tips to reduce electricity usage during PTS Hours.

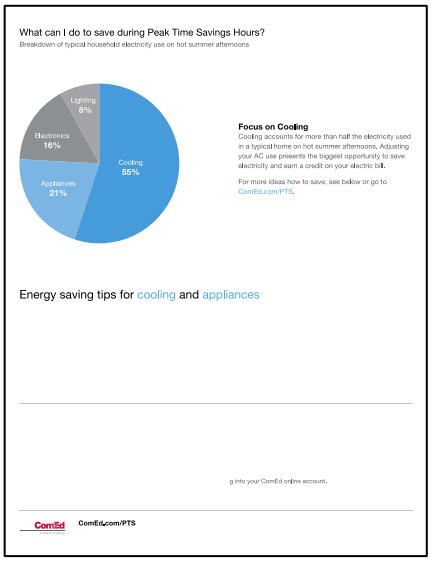
Post-Event Communications:



The day following PTS Event Hours, customers receive communication through their preferred notification channels(s) with feedback of how much they earned compared to other participants. Post-Event communication provides customers with immediate feedback of program earnings so they don't have to wait until their bill arrives.

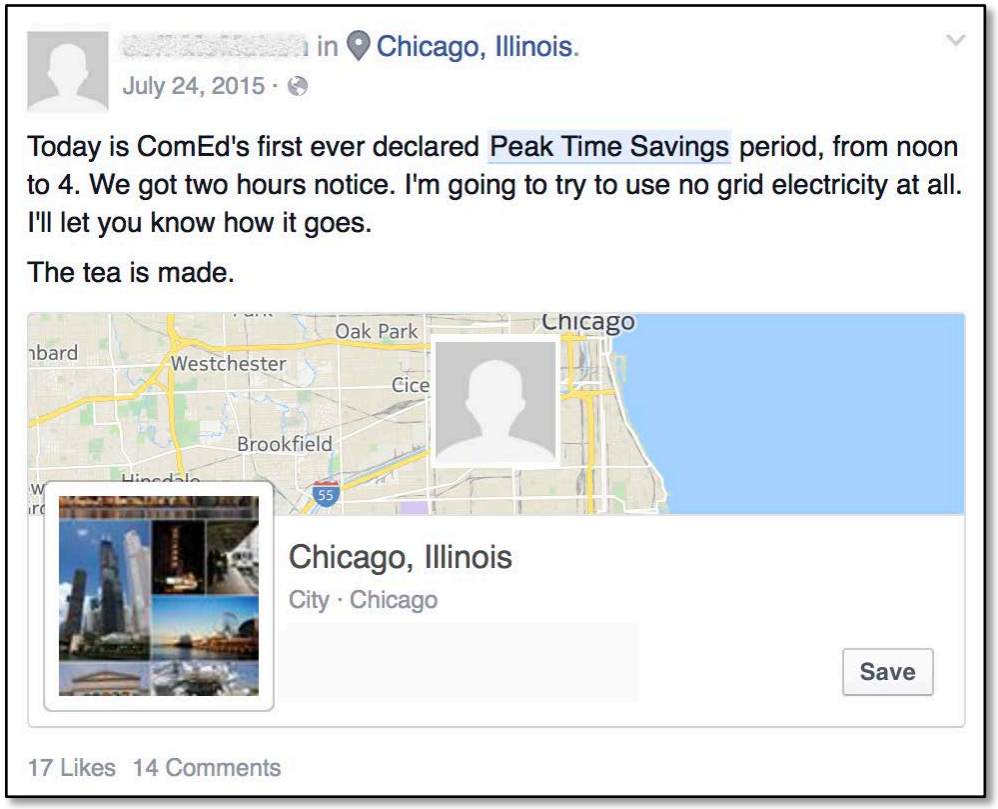
Peak Time Savings Hours Report:





Peak Time Savings Reports are mailed to customers providing mid-season progress on savings earned, projections on what they could save during the summer, as well as personalized tips to maximize their savings.

Peak Time Savings Customer sharing enthusiasm on Facebook:



PTS also complements the various smart grid and smart meter-enabled programs ComEd is offering under the SmartGridExchange[SM] initiative. From the Thermostats pilot to Hourly Pricing (Hourly Pricing was marketed to PTS customers in 2015), ComEd customers were able take full advantage of PTS as well as other offerings from ComEd.

ComEd continues to participate in the PJM Capacity Market to raise revenue for the credits customers receive through PTS. For the 2018/2019 delivery year, ComEd cleared approximately 76 megawatts ("MW") of demand response capacity for PTS in this auction, which at the auction price of $200 MW/Day will enable ComEd to call approximately ten to forty hours of events in the summer of 2018 depending on participation levels.

2015 proved the PTS program is a valuable opportunity for customers with a smart meter to take control and save money on their electric bill. ComEd also utilized this first year of the program to determine if there are additional benefits to customers by offering technology that automatically responds to PTS events. ComEd deployed the Commission-approved Direct Load Control ("DLC") Pilot during the 2015 summer to evaluate the tangible benefits to PTS participants. In this pilot, eligible PTS customers were randomly selected and offered either PTS

only, or PTS with the free installation, rebate on a Wi-Fi Thermostat or free plug-load device. The pilot measured the benefits of these technology offers in terms of impact on acceptance rate into PTS, customer satisfaction (See Chapter 4), and incremental reductions of electricity. The resulting benefits of the enabling technology were compared against the costs associated with the free installations, discounted or free devices through a cost-effectiveness study.

In all, 2,673 PTS customers were enrolled in the DLC pilot, and 807 customers were provided with a discounted Honeywell Wi-Fi Thermostat of their choice, Comverge Central AC Switch, or a ThinkEco Smart AC Kit. All of the devices automatically cycled the customers' Central or Window AC units during the six PTS events during the summer.

Direct Load Control Technologies Included in the DLC Pilot

AC Switch	WiFi Thermostat	Plug-Load
 Comverge AC switch	 Honeywell WiFi Thermostats – Focus, Vision or 9000 Model	 ThinkEco Smart AC

At the end of the pilot, ComEd partnered with Nexant to provide the Measurement & Verification ("M&V") services to evaluate and report the results of the DLC Pilot. The DLC Evaluation Report was filed at the end of the year under the Interim Order in ICC Docket No. 12-0484.

The DLC Pilot, a key initiative aligned with the "Deliver" pillar outlined in the introduction, offered tangible benefits to customers from ComEd's AMI investment by providing the customer with the technology to more easily control of their energy use under PTS.

b. Hourly Pricing Program

The AMI deployment has unlocked the ability for Hourly Pricing (formerly "Residential Real Time Pricing") customers to gain better insight of their real time electric usage.

Beginning in February 2015, RRTP customers with smart meters were able to access previous-day performance and savings in the program, previously customers needed to wait until the end

of each billing cycle to understand their performance in the program. At the end of 2015, 10,414 customers were enrolled in Hourly Pricing.

ComEd also conducted direct mail marketing for Hourly Pricing that targeted customers participating in Peak Time Savings. This marketing campaign leveraged the overlapping connections of related smart-meter enabled programs that provide customers options to save more money.

c. Home Energy Advisor

ComEd investigated the possibility and feasibility of a pilot to provide a dedicated consultation service to customers seeking advice regarding their energy usage, with possible components provided via multiple channels, including online tools, call center agents, and mobile application. After exploring potential program designs and potential vendors, ComEd is currently assessing enhancing the Opower integration in MyAccount, as well as a potential integration of an Energy Advisor component into the Energy Marketplace of products and services.

ComEd analyzed its current energy advisory capabilities that are available to customers, including the Home Energy Assessment and recent improvements to ComEd's online content. ComEd plans to incorporate energy advisory concepts and functionalities into future web and channel enhancements, as well as other programs. In 2016, ComEd will continue to investigate improved home energy advisory capabilities as part of the online Energy Marketplace.

d. Residential Metered Usage Data ("RMUD")

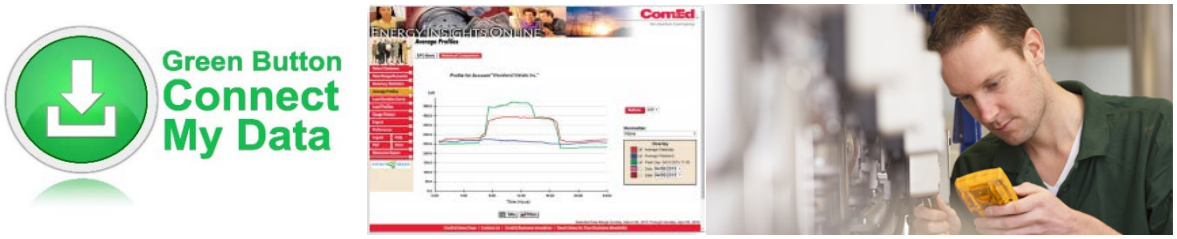
As a method to enhance and facilitate the number of choices available to customers, ComEd has implemented Rider RMUD, which enables retail electric suppliers (RESs) to offer Time of Use and Demand Response Products. Through Rider RMUD, RESs can request to receive Monthly, or Monthly and Daily, interval usage data for the residential accounts they serve that have AMI Meters. In 2015, ComEd deployed enhanced functionality to Rider RMUD that automated the enrollment/request process and data transfer process between ComEd and RESs through automated EDI transactions while preserving customer privacy and data security. ComEd is also enabling energy suppliers through an online portal on ComEd.com to request and receive data for their customers being billed on products requiring interval usage. Rider RMUD is enabling suppliers in the market to offer demand response and dynamic pricing offers to their customers, and the enhancement will allow this program to scale.

ComEd is committed to ensuring that customer-related energy usage information and data remains confidential and secure. ComEd will not disclose any personally identifiable energy use information without approval, except when required by law.

e. Green Button Connect

ComEd has enabled residential and C&I customers to consent to the disclosure of personal energy information to third parties through electronic, web-based, and other means. Green Button is an industry initiative stemming from a White House call to action for utility companies to voluntarily provide customers with easy access to their energy usage in a secure and user-

friendly electronic format. Green Button Connect My Data allows customers to authorize third-party service providers to receive direct access to their energy usage analytics via the Green Button functionality. In May 2015, ComEd partnered with Schneider Electric to deploy Green Button Connect My Data in northern Illinois. To help customers maximize energy savings via the Green Button Connect My Data functionality, ComEd offers Energy Insights Online, a free web-based energy analysis service that interfaces with Green Button. Energy Insights Online provides ComEd's commercial customers a more detailed analysis of their building's energy usage and enables third-party vendors like Schneider Electric to provide automated monitoring based commissioning (aMBCx) technology with embedded fault detection and diagnostics (FDD) analytics that accurately prioritize energy savings opportunities.



The ability to transfer data more seamlessly to third party developers will help accelerate technology applications and analytics leveraging smart meter data. ComEd integrated the Green Button Connect functionality for its Commercial & Industrial customers in the Spring of 2015. Elmhurst Hospital is among the first of ComEd's commercial customers to take advantage of ComEd's Energy Insights Online and Green Button Connect My Data. Using the Schneider Electric utility interface, data is pulled from different sources including three onsite ComEd smart meters with information Schneider Electric compiles every five minutes via 13,000 sensor points within the HVAC control system. Working with ComEd and Schneider Electric, Elmhurst Hospital was able to leverage these tools, and their smart meters, with zero additional investments in hardware or software, to reduce the energy costs of their 866,000 square feet facility.

In October 2015, ComEd successfully deployed capabilities for third party vendor registration under Green Button Connect. ComEd deployed the Green Button Connect My data solution to residential and small commercial customers in December 2015. Through implementing Green Button Connect, ComEd is providing C&I and residential customers with their own data and enabling them to better manage their energy consumption.

f. Electric Vehicles ("EV")

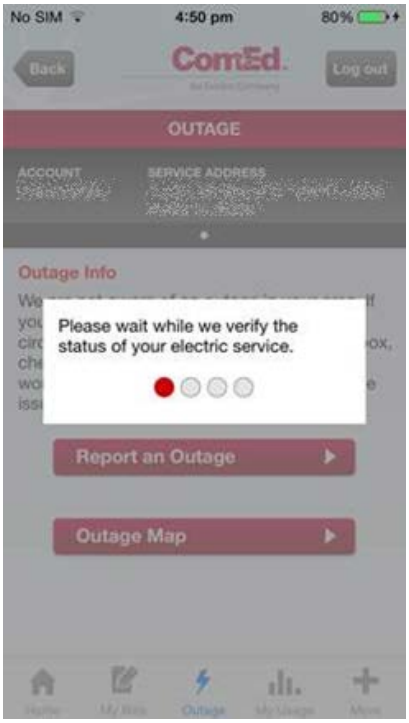
In 2015, ComEd expanded its existing EV charging infrastructure of charging ports by installing additional charging points. ComEd now has 137 total charging points. The EV charging stations are located throughout ComEd's facilities for fleet vehicles, with many available for public and employee vehicles as well. Additionally, ComEd continues its company's Workplace Charging initiatives to increase and support employee EV adoption.

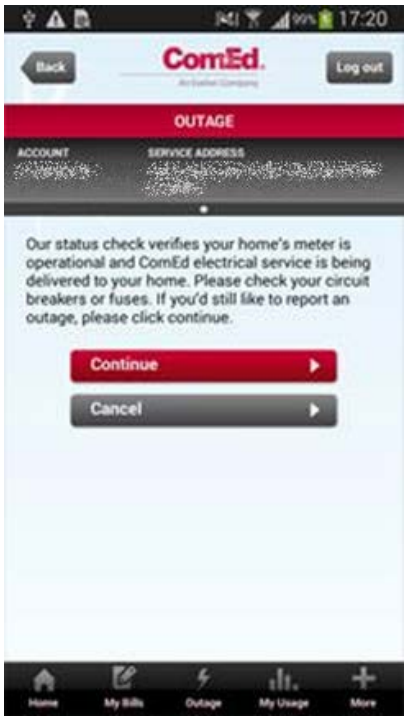
g. Improved AMI Outage Alerts:

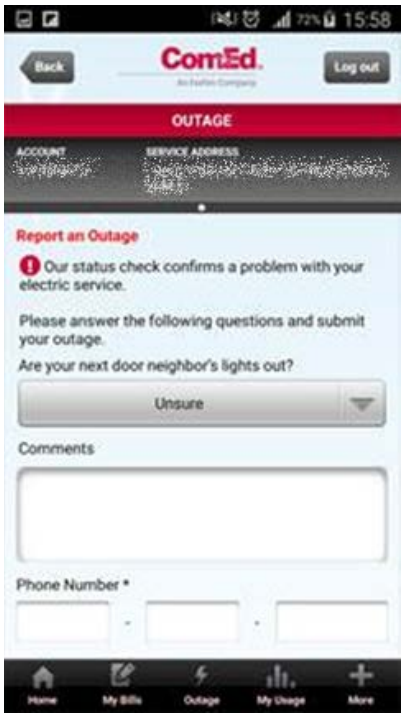
In 2015, ComEd added additional channels for customers to receive outage alerts including email and phone call, as well as re-establishing push notifications through the ComEd mobile application. As part of a comprehensive set of alerts and notifications, enrolling in outage alerts is easier than ever before through the website, mobile website, and mobile application, and includes the ability to enroll in several types of notifications through a variety of channels.

As part of the AMI/OMS (Outage Management System) integration, ComEd integrated the meter status check in the customer outage reporting channels (ComEd.com, mobile app, etc.): When a customer with an AMI meter reports an outage through one of these channels, a meter status check is executed on the backend to confirm whether or not the meter seems to be energized. If the meter is energized, ComEd provides instruction back to the customer to check circuit breakers. The customer can still self-report an outage. This capability improves the customer experience by allowing ComEd to resolve single customer outages more quickly. ComEd will continue to explore ways to improve outage communication at the meter level by utilizing AMI data to provide customers with more personalized, accurate and real-time outage alerts, warnings, and recovery tips.

Meter Status Check (in mobile application)







Outage Alerts Preference Center (in mobile application)

2. Driving Energy Efficiency through Innovation

The smart grid unlocks significant potential in the exploration of innovative technologies enabled by a resilient communications network and an abundance of data. In 2015, ComEd began utilizing the Emerging Technology program to evaluate energy efficient concepts enabled by the smart grid.

a. Thermostats Pilot

For the summer of 2014, ComEd partnered with Nest Labs, Inc in offering up to $140 in rebates for each customer who purchased a Nest Learning Thermostat™ and participated in ComEd's Smart Ideas Central Air Conditioning (AC) Cycling Pilot program.[38] In 2015, ComEd extended the 2014 Nest Pilot program to allow customers with Nest or Xfinity thermostats to receive a $40 incentive for participation from June 1st thru September 30th, 2015. During the 2015 summer season, the expanded Thermostat Pilot offered customers participating in AC Cycling $40 in rebates with the Nest thermostat or Comcast Xfinity Home platform. 2,988 customers signed up for this summer's AC Cycling Promotion and demand response pilot, and 316 customers signed up for Xfinity Home.

Below is additional information on the two thermostat providers that provide demand response services to ComEd using a smart thermostat.

1) Nest Thermostat – provided the Nest Learning Thermostat™, scheduling demand response events under their "Rush Hour Rewards Program".

2) Comcast Thermostat – offers a demand response platform under the XFINITY Home Services brand. Comcast uses the Wi-Fi-enabled EcoFactor Thermostat to curtail customers.


[38] The Commission allowed this program to become effective when it granted ComEd's Petition for Special Permission to allow revisions to Rider AC – Residential Air Conditioner Load Cycling Program, ILL. C. C. No. 10, 1st Revised Sheet No. 335, et seq. ("Rider AC") to become effective on less than 45 days' notice by order dated March 6, 2014, in ICC Docket No. 14-0120.

The expanded Thermostats Pilots allow ComEd to test the smart thermostat products as devices for residential demand response, enhance customer experience and engagement, and introduces a channel for customers to obtain innovative technology that help customers use less electricity when it is most in demand.

ComEd measured the energy efficiency benefits to customers from the Seasonal Savings program. ComEd worked with a vendor (Navigant) to collect measurement and verification data for the period from June 1, 2014 to May 31, 2015, and a final Measurement and Verification (M&V) report was produced in late 2015. In addition, ComEd will be evaluating the use of Nest thermostats in the territory (both from the ComEd pilot and general Nest customers) for continued use in AC Cycling or other ComEd programs, which will continue to leverage the benefits of smart thermostats beyond the pilot's duration.

b. Utilize AMI Network for AC Cycling

In 2015, ComEd explored the possibility of utilizing two-way networks to improve customer benefits. After careful consideration, ComEd decided not to pursue leveraging the AMI network for Direct Load Control (DLC) communications and AC Cycling as the option would use up significant AMI bandwidth. ComEd will continue its efforts to expand smart thermostats penetration for customers, as detailed in the Thermostat Pilot and Smart Thermostat Control Program sections of this report.

c. Smart Meter Connected Devices

ComEd is facilitating customer access to near-real-time electricity usage information directly from the meter along with billing information by identifying compatible retail in-home wireless devices. ComEd launched the pilot in October 2014 as the Smart Meter Connected Devices (SMCD) pilot.[39] It enables residential customers to receive electricity usage and cost information, and, in some instances, messages and alerts, through a smart device that is wirelessly connected to and can communicate with the ComEd smart meter installed at their home. This initiative helps translate smart grid and smart meter-enabled benefits to customers via a platform of meter-connected devices. With access to more information about their electricity use, customers can make changes that can help them manage electric bills.

[39] *See Commonwealth Edison Co.*, ICC Docket No. 13-0495 (Order January 28, 2014) at 81.

An SMCD participant can purchase a retail smart device that meets program requirements, register the devices with ComEd, and ComEd will wirelessly connect the devices to the ComEd smart meter at their residence. The types of devices that qualify for the program include:

- **In-Home Displays ("IHDs")**: IHDs have the ability to display electricity-usage and cost information available from smart meters. IHD features may also provide access to time of day usage data, electricity price per kWh, and energy usage costs, as well as text messages. This information appears on the digital display of the device shortly after electricity is used.

- **Energy Management Devices**: These devices can take multiple forms, but are most commonly a smart thermostat. Some Energy Management Devices have features similar to IHDs, with additional capabilities that allow customers to actively manage electricity usage such as providing notification of unusual periods of high electricity use.

- **Other Devices**: Smart appliances, range extenders (which boost or extend Wi-Fi signals) and internet gateways are examples of other smart devices that may be capable of receiving information from smart meters.

The following Smart Meter Connected Devices have been tested by ComEd to be compatible with and receive electricity usage and estimated electricity cost information from ComEd smart meters: Rainforest Automation's EMU-2 and Eagle Gateway device, and Ambient's Energy Joule.

As of February 2016, SMCD has 173 customers who have requested devices and have been connected. ComEd has been collaborating with Illinois Science and Energy Innovation

Foundation (ISEIF) to test the SMCDs and to leverage the devices for various customer behavior studies and related research. ComEd started the SMCD service working with two device manufacturers (Rainforest Automation and Ambient), and the program is contacting and testing several new prospective vendors to add more devices to the prospective vendors list, including Aztec and OWON. ComEd is also exploring further expanding the SMCD service in the future. To prepare for that expansion of the program, ComEd has conducted customer satisfaction surveys with existing customers, as well as investigating the possibility of automating the process to accommodate increased customers and enrollments.

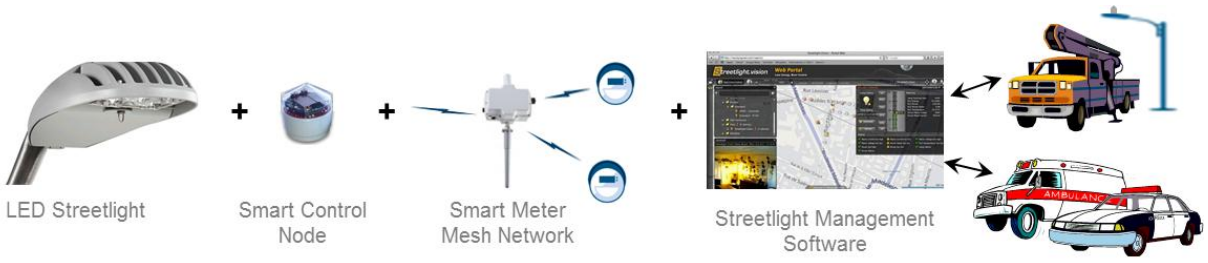
d. Smart LED Streetlights

At the end of 2014, ComEd initiated a proof of concept (POC) of smart LED streetlights in two communities it serves – Bensenville and Lombard. During Q1 2015, approximately 750 LED fixtures with smart nodes were installed between the two municipalities.

This smart streetlight solution leverages the same wireless communications network being built as part of ComEd's smart meter deployment. To enable two-way communications on this network, each POC fixture was equipped with a newly developed CIMCON brand smart control node with the same embedded wireless radio contained in ComEd's smart meters.

The POC also includes the provisioning of streetlight management software to the two municipalities, equipping them with direct control and monitoring capability over the streetlights. By late April 2015, all POC software had been deployed and authorized personnel from the two municipalities were subsequently trained on use of the systems.

Since this time, ComEd staff members have been monitoring these streetlights, performing detailed functionality testing, identifying technical issues, and, in turn, making improvements to the systems. ComEd has also been monitoring the impact of these lights on the AMI communications network to rigorously determine how streetlights affect core AMI operations. The results of the POC will be used to make informed decisions on deploying the technology on a broader scale. Expected learnings include costs and benefits, impacts to smart meter network operation, streetlight management software usability, and operational considerations.



Through the web-based streetlight management software, portals can be made available to various users with specific functionality sets (e.g., emergency responders, maintenance personnel, event management). Once connected, these smart streetlights could be remotely

controlled via pre-set schedules and/or on an ad-hoc basis, either individually or in groups. The network itself could create a platform for a wide array of potential future smart cities applications, such as sensors (e.g., weather, traffic, air quality) and measurement devices such as water and gas meters. Also, the web portals for police and emergency responders may enable lights to be controlled on demand in some situations. Appropriate process controls and cyber security protections are under development and will be fully vetted prior to launch.

This smart LED streetlight solution leveraging ComEd's smart meter communications network could offer a variety of benefits. The highly-efficient, longer-lasting LED fixtures with remote control and monitoring increase energy savings and reduce maintenance costs, while improving security and safety through fewer light failures and greater resiliency to damage. Since each control node includes revenue grade metrology allowing metered street light usage, improved accounting for energy usage would be possible, as would potential further energy reductions through functions such as streetlight adaptive lighting.

e. DETech Enterprise Plug Load Management Research Project

Through a research project, ComEd evaluated the customer benefits of plug-load appliance energy management for commercial use. The DETech Enterprise Plug Load Management Research Project is in line with the "collaborate" strategy outlined in the introduction. ComEd was a sponsor of a research study of DETech's commercial plug load device. This study evaluated the use of Plug Load Energy Monitoring devices in the ComEd territory for C&I customers. Plug loads can be responsible for a significant portion of energy usage, such as monitors, desktops, chargers, printers, shredders, etc. The enterprise plug load management research project provided an opportunity for sponsors (ComEd and Puget Sound Energy are among several sponsors of this research project) to participate in testing new solutions in a "sandbox" environment in order to better understand the potential of this technology for their customers and their own operating environment.

The research project started in the summer of 2014 and continued through March 2015. The survey results found that a ~30% reduction in energy use was achieved on plug load devices over the baseline.

ComEd currently has smart power strips for residential customers through its direct install home energy assessment. ComEd is currently investigating advanced power strips for its Small Business program.

f. Bidgely Pilot

ComEd is conducting a pilot with Bidgely, an emerging energy disaggregator and leading energy analytics Software-as-a-Service ("SaaS") provider serving utility customers to test Bidgely's new HomeBeat™ Energy Monitor and Web & Mobile engagement solution with ComEd customers. Bidgely has created a technology which breaks a household's energy usage down to the appliance level. ComEd is one of the first utilities to offer to customers this technology, which will provide them with personalized energy reports detailing how and when they use energy in their homes:

- HomeBeat Web & Mobile app: Enhanced mobile app that provides real-time notifications and insights around energy use and puts the ability to make smarter decisions about energy in the palm of the customer's hand.

- HomeBeat Energy Monitor: Simple and affordable in-home gateway that syncs smart meter data with Bidgely's cloud to enable real-time energy insights

ComEd completed the pilot's first phase in the second half of 2015, an employee pilot in which 24 ComEd employee participants received the HomeBeat Energy Monitor, which connects directly to their ComEd smart meter and provides real-time energy usage data to the Bidgely cloud. Via a process known as disaggregation, the information is analyzed in near real time to provide appliance level energy use to the participant through the Bidgely web and mobile platform. After the home employee user acceptance test, an additional 2,500 participants will receive access to Bidgely's HomeBeat Web & Mobile platform.

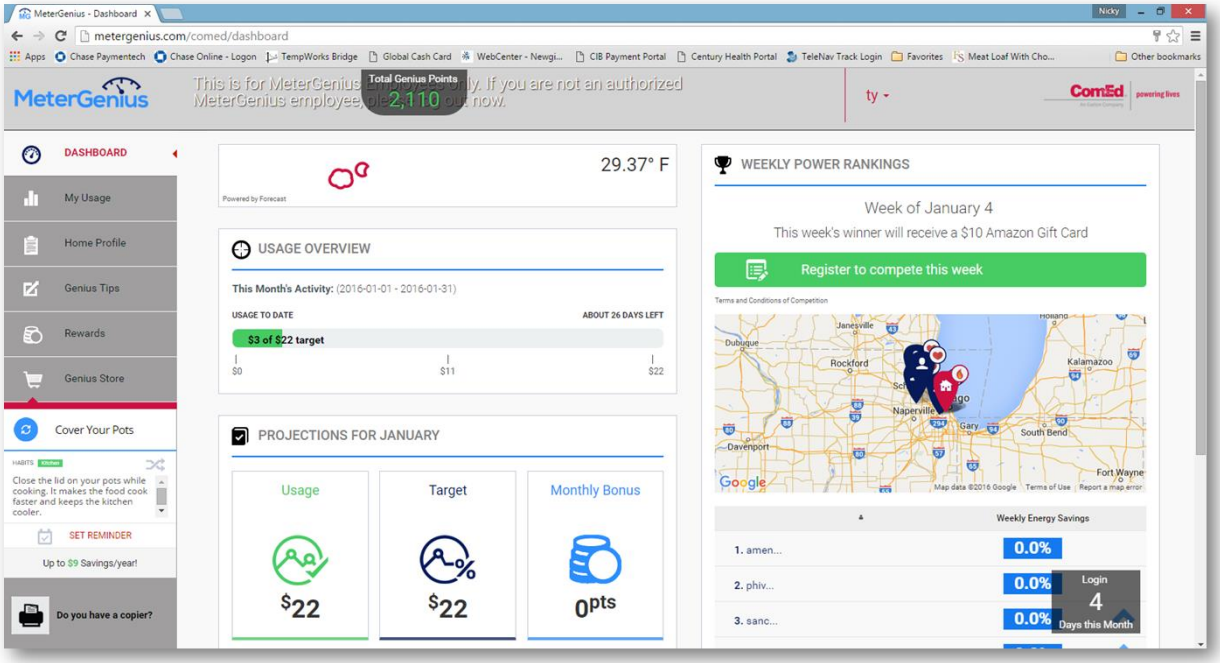
Bidgely's HomeBeat platform will provide personalized appliance-level insights through the company's disaggregation-based solution. This technology will empower customers to take specific actions that will help them save energy. The inclusion of Bidgely's HomeBeat Energy Monitor, which is a customer-requested device, enables ComEd to offer real-time energy insights, such as high-usage alerts via mobile push notifications within minutes of use.

g. MeterGenius Pilot

ComEd is conducting a pilot with MeterGenius, a start-up launched by Northwestern University students in 2013. The MeterGenius platform allows residential consumers to view their electricity consumption data via web and mobile applications, set an energy budget, receive tips on reducing usage and earn rewards. MeterGenius is a developmental platform that makes the "big data" and analytics of energy usage useful for ComEd's customers. ComEd has been working with MeterGenius to develop a 6-month pilot for select ComEd customers with smart meters to determine the amount of electricity MeterGenius' platform can save, along with impacts on customer satisfaction and engagement in other ComEd efficiency programs.

The MeterGenius pilot launched on December 1, 2015 and will run for 6 months. The pilot includes nearly 6,500 randomly selected customers that have smart meters installed at their homes in ComEd's service area. MeterGenius leverages the smart meter network to show participants their 30-minute usage data, which is updated the next day. The customers have unlimited access to MeterGenius' web and mobile applications, which allows them to budget and track their energy usage on a granular level by the hour, day, week or month. Participants receive monthly communications with customizable tips on how to lower their electricity bills, and energy-efficient habit reminders such as closing the blinds during the day to reduce cooling costs and defrosting the freezer on a regular basis in order to increase its efficiency. In addition, by using MeterGenius' tools, participating customers can earn points that can be redeemed for gift cards and energy efficient products, and they can register for weekly competitions to compete against neighbors to see who can lower their electricity consumption the most compared to the prior week, as well.

MeterGenius web application



h. Water Heater Efficiency and Metering

In 2015, ComEd investigated water heater sensor technology to potentially co-develop and/or test. Water heater efficiency sensor technology can be directly linked to a programmable water heater thermostat, and the technology installs directly onto a user's water heater and learns their hot water usage patterns and control the water heater to save energy. One such promising technology, offered by the company Aquanta, is pending UL certification before ComEd can test its product with its customers or on ComEd property. As an alternative, ComEd evaluated Aqua Smart's software, which translates the sensor data to create a usage chart to enable smart cycling of the heating element and quantify the heating energy and hot water used. The technology

provides insight into water heating energy and hot water use as well as alerts for maintenance issues, and enable its control – right from a programmable device. ComEd is currently exploring a partnership with Seventh Wave Labs to install Aqua Smart's technology for a small, 10-home tech trial.

3. Collaboration

ComEd has worked to collaborate with stakeholders, universities, local retailers and a venture capital fund to foster innovation through a collaborative approach.

a. Grid Enhancement Retailer Program

Through both its Thermostats Pilot and Smart Meter Connected Devices service, ComEd has continued partnering with retailers and manufacturers of smart thermostats and other devices. While exploring new collaborations to initiate with appliance retailers, ComEd began to investigate a potentially improved channel for products and services—a web-based energy marketplace connecting premier vendors with customers. An online Energy Marketplace would connect customers to products much like major home improvement and appliance stores do in a physical environment. Along with an energy advisor avatar component, this online platform would inform customers regarding products and AMI-enabled programs, educating customers on the AMI deployment and providing customers incentives on AMI-enabled products. An online Energy Marketplace would improve the customer experience and help ComEd serve as a trusted energy advisor to customers.

b. SmartGridExchange^{SM} Forum

On November 4, 2015, ComEd sponsored a forum at the Art Institute of Chicago's Stock Exchange Room. The ComEd SmartGridExchange^{SM} (SGE) Forum hosted select thought leaders, experts, and stakeholder groups in the Illinois community for a 1-day conference aimed at sharing, debating, and co-designing features and principles that can strengthen the SmartGridExchange^{SM}'s success. Industry leaders and innovators, as well as regulators and stakeholders, participated in a series of panels surrounding several core themes of the smart-grid space, including discussing ways to incorporate customer-oriented design into smart energy solutions. The SGE Forum is a core activity aligned with the "Inform" pillar outlined in the introduction.

c. Local Developer Collaboration

The smart grid serves as a launch pad for entrepreneurs to create innovative solutions to assist residents and businesses in conserving energy. ComEd helped found—and continues to contribute to—the Illinois Energy Foundry, a private nonprofit venture fund fostering the start-up or development of innovative smart grid-related businesses in Illinois. The Foundry has funded several new businesses in Chicago that continue to foster innovation on the smart grid.

ENERGY FOUNDRY

ComEd continues to support the Energy Foundry in its mission to foster innovative new grid-related and energy-related products and services. ComEd's vice president of smart grid and engineering holds weekly office hours at the Foundry's Coalition Space in downtown Chicago to talk face-to-face with entrepreneurs and provide the utility perspective as new ideas are developed. The pipeline continues to be robust, with applications received that span across a diverse range of business sectors and development stages such as gas, water, energy storage, transportation, generation, power electronics, building technology and infrastructure.

C. 2016 Initiatives and Plans

ComEd's smart grid investment is establishing a flexible infrastructure that will both encourage and take advantage of future innovations. As ComEd delivers on the value of the smart grid today, many of the benefits will continue to unfold over time as the role of the energy sector

evolves. ComEd has the opportunity to bring the functionality and value of the smart grid to our customers by bringing forth more innovative programs, technology and cost savings. In 2016, ComEd plans to further build on its progress under the first two years of the SmartGridExchange[SM] by pursuing ways to expand successful 2015 initiatives to bring the benefits of AMI to even more customers.

Along with efforts to continue the deployment and expansion of new and existing products and services, ComEd plans to continue technology research on a regular basis. Promising ideas that are tested as new pilots help provide a preliminary picture and valuable insights, allowing ComEd to measure the results of the pilot/study and draw lessons in order to evaluate whether individual pilot or demonstration initiatives should develop into full-scale programs that offer greater value to customers with AMI. ComEd envisions this as a fluid process as the 2016 initiatives pipeline evolves—constantly evaluating potential offerings, introducing new ideas, and identifying and revising those with potential. This ongoing research and development process ensures that the SmartGridExchange[SM] can continue to serve as a seedbed of new ideas as the industry and vendor landscape evolves.

2016 Targeted Activities			
Expanded Initiatives	Thermostats Pilot	Expand the AC Cycling offering to include the Ecobee 3 thermostat allowing participating customers to earn $40 during the summer season.	
	Expanded Smart Meter Connected Devices	Working with manufactures to expand the list of approved in-home devices that communicate with Smart Meters. Potential marketing and automation of program enrollments.	
	Silverlink and Bidgely Pilot	Launch Phase Two of Bidgely Pilot to evaluate the use of Bidgely hardware and SilverLink Sensor Network.	
	Student Innovation Contest	Seek to partner with local colleges and philanthropic organizations with the goal of engaging more diverse students.	
Continued In-Market Programs	Peak Time Savings	Continue to deliver a Premier Customer Experience while scaling and enhancing the program.	
	Local Developer Collaboration	Continue working with local start-up companies and supporting the Energy Foundry.	

	Smart Streetlights	Evaluate the results of the Proof of Concept project to determine suitability for broader deployment. Continue to collaborate with technology vendors to enhance the reliability and functionality of the solution.	
	Residential Green Button Connect	Continue collaboration with third party partners to allow customers to access their smart meter data	
	MeterGenius Pilot	Conduct 6-month pilot with select residential consumers to access the MeterGenius web and mobile applications and reduce their energy use.	
	SmartGridExchange℠ Forum	Host annual forum with thought leaders and stakeholder groups in the Illinois community aimed at sharing, debating, and co-developing features and principles that can strengthen the SmartGridExchange℠	
	Local Developer Collaboration	Continue to collaborate with the Illinois Energy Foundry, a nonprofit venture fund fostering the development of innovative smart grid-related businesses in Illinois	
Areas of Exploration	Energy Marketplace	Continue scope-out and approval process for web-based "Beyond the Meter" Energy Marketplace connecting customers with products	
	EV Charging	Explore the feasibility and details of various EV offerings, business models, rate plans, etc.	
	Smart Thermostat Control Program	Explore the option to enable customers to bring their own smart thermostat technology to participate in residential demand response and pricing programs	 

1. Expanded Initiatives In 2016

a. Thermostats Pilot

As the marketplace for smart thermostats evolves, ComEd plans to evaluate and potentially expand the offering to other vendor platforms, including the Ecobee 3 smart thermostat. For the 2016 Summer season, ComEd plans to offer AC Cycling to Ecobee and Nest thermostats for customers to earn $40 during the summer season. Beyond Ecobee, ComEd plans to explore other potential thermostat companies to further expand the program.

ComEd is also currently exploring a Smart Thermostat Control Program continue expanding the list of capable thermostats with AC Cycling and/or other ComEd programs (see 3 c) “Smart Thermostat Control Program”

b. Expansion of Smart Meter Connected Devices

With the SMCD service offered on ComEd.com, customers are enabled to purchase ComEd-certified smart energy devices directly from manufacturers facilitated through the ComEd website. Once joined to the customer's smart meter, the devices can receive pricing and smart meter energy consumption usage data in real-time. These devices, connected directly to the smart meter via a secure communication network, provide customers near instant access to the latest pricing and usage data.

Now that customers can take advantage of the Smart Meter’s Home Area Network capability by connecting compatible in-home devices through the SMCD pilot, ComEd plans to expand this program to enable more devices as well as more customers. ComEd is working with device manufacturers and new prospective vendors to test more in-home wireless devices. To assist the expansion of this program, ComEd plans to continue collaborating with the Illinois Science and Energy Innovation Foundation (“ISEIF”) to test the Smart Meter Connected Devices for various customer behavior studies and related research.

In 2016, ComEd plans on continuing to explore additional in-home devices that link the data stream from the smart meter to an in-home display or mobile and web application. ComEd is also currently testing SMCDs with commercial meters, in order to explore what it would take to expand this residential service to commercial customers. ComEd is also exploring the technical feasibility of automating the enrollment process in order to prepare for a larger expansion of

marketing and enrollments for the service. Insights from customer surveys conducted at the end of 2015 will be used for future marketing campaigns to expand the program to more participants.

c. Silver Spring-Silver Link Data Access with Bidgely

In 2015, the Bidgely pilot conducted an internal employee user acceptance test of the Bidgely hardware, followed by recruitment of ComEd customers for the Phase 1 Pilot. In 2016, ComEd plans on working with Silver Spring Networks during Phase 2 of the pilot to explore their Silver Link Sensor Network technology. This platform is capable of providing a real-time data feed directly from the AMI network to secure and approved third parties such as Bidgely to act as an energy disaggregate solution for customers to understand their energy usage and cost at an appliance level.

A major benefit of the Silver Link Technology is that it excludes the need for a customer to obtain and maintain a piece of hardware that communicates to the meter for real-time usage information.

ComEd's primary objectives of the Bidgely pilot are to: 1) measure energy savings achieved by the Bidgely engagement platform with disaggregated energy breakdown at the customer's appliance level; 2) evaluate the potential of the Bidgely solution to promote and influence interest in ComEd demand-side-management products; 3) evaluate and measure customer use and feedback related to the Bidgely solution as a value-added service to increase customer engagement and satisfaction; and 4) evaluate effectiveness and performance of HomeBeat Energy™ Monitors and to validate for use on ComEd's AMI Network.

Phase two of the pilot is expected to launch in Q2 2016 and run for approximately six months. As ComEd's review of potential systems continues, the schedule and deployment strategy of Phase two of the pilot are subject to change.

d. Student Innovation Contest

In 2014, ComEd launched a Student Innovation Contest to challenge students at local colleges and universities within ComEd's service territory to create innovative smart meter-related products, services and software apps that will empower low-income customers to use their home's smart meter to manage their electric bills and potentially save money. In 2016, ComEd plans to pursue partnering with local colleges and philanthropic organizations with the goal of engaging more diverse students in a Student Innovation Contest.

2. Continued In-Market Programs

a. Peak Time Savings (PTS)

ComEd plans to continue the success of Peak Time Savings in 2016 and beyond. As the installation of residential smart meters progresses at a rapid pace, more and more customers become eligible for this program. In 2016, approximately 2 million customers will be eligible to participate in the summer 2016 PTS season. ComEd will continue to use proven and successful methods to recruit these eligible customers, including bill inserts and mailers, while also

conducting testing of enhanced program materials to continually increase acceptance rates. As all residential customers eventually become eligible with smart meters, ComEd expects 400,000 customers would participate in the program by 2020.

PTS will also undergo IT enhancements in 2016 that will both increase operational efficiencies and ensure a premier customer experience in the program. Planned enhancements include improvements to the enrollments process, reporting and customer's bill credit presentment.

ComEd conducted a DLC Pilot program during the summer of 2015 and filed the evaluation report in Docket No. 12-0484 on December 30, 2015. This pilot was conducted in order for ComEd to make a recommendation to the Commission whether to offer DLC technology to PTS customers. ComEd filed that recommendation through a Phase 3 direct testimony filed in Docket No. 12-0484 on April 1, 2016. The pilot evaluation concluded that customers with enabling technology were significantly more satisfied and load reductions during PTS events were 2.5 - 3 times greater than PTS customers without technology. However, the incremental benefits of the technologies did not outweigh the incremental costs. The pilot suggested that technologies such as smart thermostats, central AC switches and plug-in-load devices increase performance in PTS and increases customer satisfaction. Therefore, ComEd also explores methods to incorporate these devices into the program in a cost-effective manner in the interest of increasing customer savings and satisfaction. One potential method to incorporate DLC technology into PTS in a cost-effective method is for ComEd to control qualified smart thermostats that the customer already owned or expected to acquire in a smart thermostat control program that ComEd is considering to offer.

b. Local Developers Collaboration

ComEd continues to explore and support local and innovative start-up companies through the Energy Foundry. ComEd will continue to leverage Energy Foundry as a pipeline of new energy-related products and services. In addition to serving as a regional green tech startup accelerator, local developer collaborations can serve as a competitive platform for generating ideas.

c. Smart LED Streetlights

ComEd is developing a smart LED streetlight solution that leverages the same two-way wireless communications network being built as part of our smart meter deployment. Pending a complete evaluation of the POC, this may enable ComEd to offer smart LED streetlight service to all of the communities we serve, extracting additional value from the smart grid.

In 2016, ComEd will continue to collaborate with technology vendors to enhance the reliability and functionality of the smart streetlight solution. This includes the smart control node and LED fixture hardware as well as the back-office Central Management System (CMS) software. Through this continued effort, ComEd hopes to refine the technical solution and operational process needed to support offering smart streetlights more broadly.

d. Green Button Connect for Residential Customers:

With Green Button connect, personal data can be leveraged to advise customers on:

- Simple actions to save energy
- Planning home retrofits to upgrade appliances, lighting, HVAC
- The optimal size and configuration of solar PV

The ability to transfer data securely and seamlessly to third party developers will help accelerate technology applications and analytics leveraging smart meter data. ComEd integrated the Green Button Connect functionality for its Commercial & Industrial customers in the Spring of 2015, and residential customers in late 2015. In 2016, the recently launched residential customer solution in 2015, will enable third party applications to provide residential customers with personalized insights on energy consumption. UtilityAPI is the first third-party partnering with ComEd, and ComEd plans to expand the list of third parties throughout 2016.

e. MeterGenius Pilot

ComEd will conduct the MeterGenius pilot during the first half of 2016 with nearly 6,500 randomly selected customers that have smart meters installed at their homes in ComEd's service area. ComEd is also considering extending the pilot until August 2016, in order to obtain summer savings data for pilot participants.

f. SmartGridExchange℠ Forum

ComEd plans to continue the success of the 2014 and 2015 Forum with a series of annual Policy Forums that gather stakeholders to discuss the future of the smart grid and how best to deliver its benefits to customers. The 2016 Forum will again gather industry leaders and innovators as well as regulators and stakeholders to participate in a series of panels surrounding core themes of the smart-grid space.

3. Areas of Further Exploration In 2016

a. Energy Marketplace

Starting in late 2015, ComEd began exploring the offering of an Energy Marketplace in the coming years, in order to connect customers with vendors of products and services. A web-based Marketplace would offer customers the following benefits:

- **Personalized** energy saving insights, plans & offerings
- **Consolidated source** of products/services for customers to make the most informed decision about energy offering purchases effectively
- **Easy to understand** estimate of savings & discounts, access to rebates, installation, and related services

ComEd plans to continue scoping out the Energy Marketplace in 2016. This marketplace web portal would potentially coordinate third party products, services, and bundled offerings, offering

transaction, order, and purchase support comparable to other retailers. It seeks to provide a broad and scalable platform to offer customers to purchase and browse an ever evolving range of energy related, beyond the meter products and services. Other features would include a customer insight module and analytics engine.

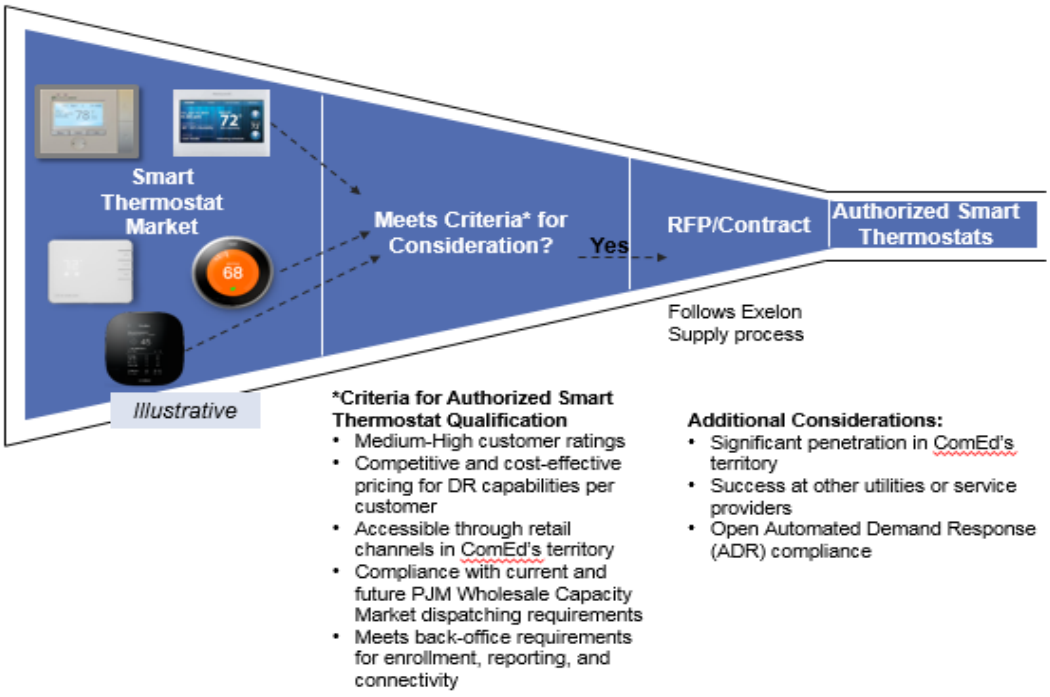
b. EV Charging

In 2016, ComEd continues to explore ways to take a leadership role in facilitating the EV market in Illinois. ComEd is considering charging applications in the following areas: workplace charging, multi-unit dwellings (MuDs), municipal parking lots, long-term parking lots, and economically-challenged areas to provide a 'public good' to the EV market within its service territory.

c. Smart Thermostats Control Program

ComEd is investigating ways to expand customer opportunities to use their own devices and participate in demand response programs. In order to further expand the Thermostats Pilot in 2016 and beyond, ComEd is exploring the feasibility of supporting the Smart Thermostat Control Program, an offering that would enable ComEd leverage more smart thermostats in its territory for residential demand response. ComEd can incorporate its previous DLC technology-related pilot experiences into a model that enables customers to bring their own technologies to participate in demand response. For customers who purchase or already own authorized DLC technologies, ComEd would broadcast signals for customers to manage their own devices. In 2016, ComEd plans to scope out the details of a collaboration that would expand the thermostat program for customers to bring their own technology, increasing participation and choice, all while saving customers more on their bill. The program could also offer PTS customers an option to have ComEd cycle customer-owned, qualified smart thermostats to help them earn greater rebates more conveniently.

Smart Thermostat Qualification Process for the Smart Thermostat Control Program



Under the Smart Thermostat Control Program, ComEd could pursue multiple marketing channels and co-promotion strategies to increase awareness and realize widespread customer adoption. Approved vendors under the Smart Thermostat Program could promote to customers through ComEd or directly promote their products through their own channels, while partnering with ComEd. ComEd could also co-promote PTS with existing ComEd thermostat rebates, giving PTS customers the option to leverage smart thermostat technology to help them earn greater rebates more conveniently.

IV. CUSTOMER OUTREACH AND EDUCATION

In 2015, ComEd continued smart meter outreach and education efforts, which included increasing efforts consistent with the growth in deployment levels discussed in Chapter 2, by:

(1) attending and scheduling local events in order to distribute information to educate customers about the benefits of smart meters;

(2) delivering staged-messaging communications, prior to, during and after smart meter installation, that continue to utilize results from 2013 market research to provide customers with awareness, information and education about smart meter installations and how to take advantage of online energy-management tools and programs;

(3) conducting education programs customized to fit specific customer segments as identified by demographic data; and

(4) promoting ComEd's CARE financial-assistance program that is designed to assist eligible customers who have fallen behind on their electric bills.

Outreach and education efforts planned for 2016 include:

(1) continued focus on general education to provide customers with information on the use and benefits of smart meters;

(2) continued use of messages that educate customers about energy-saving tips and energy-efficiency program offerings;

(3) continued research to enhance customer outreach efforts and messages;

(4) on-going staged-messaging communications to customers throughout the deployment process;

(5) on-going customization of education programs to fit specific customer segments as identified by demographic data; and

(6) enhancements to ongoing financial-assistance programs designed to assist low-income customers.

The accomplishments achieved in 2015 and the plans for 2016 are described in further detail in this chapter.

A. 2015 Activities and Accomplishments

1. Outreach and Education Increased with Deployment

As previously noted, customer outreach and education efforts increased consistent with the growth in deployment levels for 2015. This included educating customers whose installations had been moved up to 2015 through staged-messaging communications.

2. Customer Education and Awareness

Throughout 2015, ComEd continued to provide customers with information to build awareness and education around energy management, smart meters and associated smart meter benefits. In addition, ComEd communicated specific actions that all customers can take to better manage their electricity usage, regardless of whether customers have smart meters. Channels for such information and education included the following:

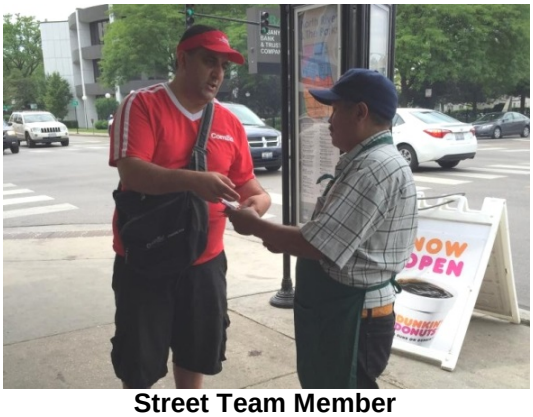
Community Events & Outreach: ComEd sought out local community festivals and shopping malls in areas where meters were scheduled to be deployed in order to educate customers about smart meters and their associated benefits. To do so, ComEd relied upon direct interactions, brochures, and video kiosks. In pre-deployment areas, this information focused on smart meter awareness and general energy-management tips. In post deployment areas, customers also received information about smart meters and energy-management tips, but also received information about online energy-management tools and programs, such as Peak Time Savings, that are designed to help customers better manage their electricity use and save money.

In 2015, ComEd expanded the focus of its event outreach to include large-scale events that would attract customers from numerous municipalities, including multiple Earth Day events in Glenview, Hoffman Estates, Morton Grove, Rolling Meadows and Wheaton, Fiestas Patrias, and the St. Anthony Hospital Summer Fest. In an effort to continue grassroots outreach during the

colder months, ComEd had education booths at various malls in Lincolnwood, Orland Park, Schaumburg and Aurora.

ComEd also continued the deployment of Street Teams in 2015. Street Teams utilized trained ambassadors to greet and interact with customers in high foot-traffic areas and to distribute educational brochures. Street Teams were mobilized to interact with commuters at train platforms, including the Damen Blue Line station and Park Ridge Metra station. These "quick touch" interactions allowed for the distribution of brochures and a pen that included a unique website address where customers could learn more about smart meters while commuting to work or home.

Community Events



Street Team Member

Peak Time Savings Campaign: ComEd continued its Peak Time Savings ("PTS") direct communications, enrollment campaign, which targeted customers who already have a smart meter. The campaign encouraged enrollment by April 2015 so that eligible customers could participate in the 2015 summer season, as opposed to the following season.

The enrollment campaign continued in January with a marketing blitz that included a bill insert to customers who had smart meters installed at that time, followed by February and March mailings to customers who recently became eligible because they received smart meters. In May, enrolled customers received mailings to remind them of the upcoming summer season and confirm their notification preferences for Peak Time Savings Hours.

As part of the Commission-approved Direct Load Control (DLC) pilot program, ComEd supplemented the PTS enrollment campaign with direct communications to subsets of customers with additional offers of direct load control energy-management technologies. The purpose of the targeted campaign was to determine whether automating load-reduction technologies – which included a smart thermostat control device; a plug-in, remote-controlled outlet and thermostat for window air conditioners; and a radio-controlled switch installed on the compressor of a customer's central AC system – helped incent customers to enroll in PTS and improved their electricity usage reductions during Peak Time Savings Hours. In addition to receiving the same enrollment materials as other eligible customers, these targeted customers also received a bill insert and letter explaining their special offer and unique instructions for enrolling in PTS with

their special offer. Information on the research results of the special offers can be found in Chapter 3, Market Research Efforts of this report. More information on PTS can be found in Chapter 3, Customer Applications, of this report.

Earth Month Challenge: ComEd utilized an Earth Month Challenge program throughout the month of April to provide area elementary schools within ComEd's smart meter deployment areas with an innovative way to learn about smart meters, energy management and how to save money by offering the chance to be featured on ComEd's social media channels. Tasks developed as part of the challenge introduced students and their parents to smart meter benefits, energy-management techniques, smart technologies, Peak Time Savings and even the new functionality available through ComEd's re-launched MyAccount website. This introduced students and their families to ways to better manage their electricity usage, become more energy efficient and save money on electric bills. Students could even complete energy-related tasks to reduce electricity usage at home.

Targeted Education Initiatives: ComEd's education efforts consisted of its successful Student Power, Smart Grid Ambassador, Youth Ambassador and ComEd Discovery Lab programs.

Student Power: During the 2015-2016, ComEd continued Student Power – a signature program originally created for the 2014-15 school year in conjunction with Chicago Public Schools. Student Power provides students in grades 3 through 12 with curriculums tailored for elementary and high school students that use online tools to track energy-management activities and energy savings at school and at home. For the 2015-16 school year, ComEd expanded the program to include suburban and private schools, resulting in participation from 45 schools that represent 100 teachers and nearly 12,000 students. During the 2014-15 school year, 25 schools and 7,040 students participated in the Student Power program. ComEd plans to continue the program into the 2016-17 school year.

Smart Grid Ambassadors: ComEd continued to recruit recent company retirees to voluntarily serve as Smart Grid Ambassadors. ComEd retirees attended orientation training in October 2014 to learn about grid modernization activities across the country, as well as ComEd's smart grid and smart meter initiatives in northern Illinois. Additional retirees were trained in October 2015. In total, ambassadors actively assisted with education and awareness efforts through participation at educational workshops and community events.

Smart Grid Ambassadors in Training

Smart Grid Ambassadors with Customers

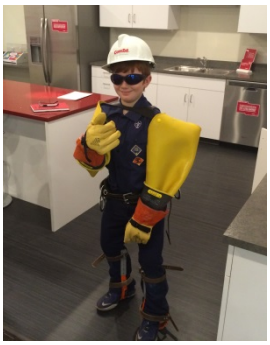
Youth Ambassadors: ComEd again joined with After School Matters in the annual Youth Ambassador program, which resulted in 101 14-to-18-year-old students completing the program in 2015. The students attended program training at Columbia College, Marine Leadership Academy, Back of the Yards College Preparatory High School and Eric Solorio High School, where they completed a curriculum on energy management, how electricity works, the smart grid and smart meters. They then became advocates at local community events throughout the summer, helping peers, neighbors and residents better understand how they can take advantage of programs such as Peak Time Savings, as well as the simple steps they can take to better manage their electricity use. Students also had opportunities to meet ComEd engineers and other employees to learn about careers within ComEd.

Youth Ambassadors in the Field

Youth Ambassadors Present Program Learnings

ComEd Discovery Lab: The number of people visiting the ComEd Discovery Lab at the Rockford Training Center nearly doubled from approximately 1,500 in 2014 to nearly 2,900 in 2015. Participants had opportunities to learn about the history and science of electricity, received safety tips, and tested their energy knowledge through interactive video games. Each field trip, which can be tailored for elementary-school students, high-school students and senior-citizen groups, was designed to generate awareness and understanding of the smart grid, smart meters, and how energy relates to their daily lives. The Lab features wall displays that provide energy-efficiency and electrical-safety tips for participants to share with family and friends. To increase attendance at the Discovery Lab, ComEd promoted the Science, Technology, Engineering and Math (STEM)-related aspects of the lab at area education events. At the same time, ComEd

found that schools and organizations who took part in field trips in previous years returned again in 2015.



K-8 Field Trip

High School Field Trip

Adult Learners Field Trip

Local Workshops: Throughout the year, ComEd conducted workshops – in both English and Spanish – in smart meter deployment areas after meters had been installed to educate customers about smart meter benefits. ComEd also provided workshops and literature specially designed for seniors and low-income customers. All workshops featured a trained speaker and a presentation that explains each of the energy-management programs available to customers, including how to enroll in Peak Time Savings. The workshops also provide customers with opportunities to ask questions and engage in dialogue with a knowledgeable ComEd representative.

Smart Meter Workshops

Online/Web presence: ComEd continued to utilize online channels such as ComEd.com/SmartMeter to inform and educate customers about online energy-management tools and programs available to customers with smart meters, as well as ComEd.com/HomeSavings to educate customers about available energy-efficiency programs.

ComEd also took advantage of social media – e.g., Facebook, Twitter, Instagram – to promote ComEd festival appearances, locations, and dates as a way to encourage customers to attend events to pose questions directly to ComEd representatives and learn more about smart meters and energy-management programs. In June, ComEd posted the first of six videos on ComEd.com and YouTube to help educate customers about the smart grid and smart meters, as well as how to take advantage of their associated benefits. Throughout the year, ComEd continued to update these websites with the remaining videos and repost staged-messaging communication materials each time they were updated to reflect program name changes. ComEd also posted newly created materials to help address questions raised by customers at events, such as the "How to Read a Smart Meter" fact sheet.

"How to Read a Smart Meter" Fact Sheet

In October, ComEd launched the redesigned Preference Center, which provides customers with a one-stop shop for enrolling in smart meter-enabled personalized alerts and notifications through the ComEd.com website, mobile site and mobile app. In addition to outage, billing and payment alerts, ComEd simplified the way customers enroll in High-Usage Alerts and Weekly Usage Reports, both of which are made available as a result of smart meter technology.

Municipal Outreach: ComEd leveraged outreach to municipal leaders and aldermen to inform them and their constituents about the smart meter educational events and activities ComEd planned for their communities. This included one-on-one meetings, attendance at city council meetings, and posting videos of Smart Meter Workshops to YouTube so that municipalities could access and use them as informational resources for local residents. ComEd used one-on-one meetings to update municipal leaders and aldermen on how local residents can take advantage of the benefits smart meters provide, so that the municipal leaders and aldermen could become third-party advocates for taking advantage of online energy-management tools and programs. ComEd conducted municipal meetings in a majority of towns where smart meters were deployed and provided municipality officials with a toolkit that included: smart grid-smart meter fact sheets, brochures, and samples of communications that customers would receive throughout the smart meter deployment process. ComEd External Affairs managers also met with municipal leaders, prior to the deployment of smart meters in their towns, to discuss the

installation process and answer questions. In 2015, External Affairs conducted 597 informational meetings with municipal officials, as well as 13 field tours.

Educating Municipal Leaders in Buffalo Grove

Rockford Installation Kickoff with Ald. Chiarelli

Community Partners: In 2015, ComEd augmented smart meter outreach efforts by collaborating with community organizations to hold meetings, share materials, and support third-party community activities.

For example, ComEd collaborated with the Illinois Science and Energy Innovation Foundation ("ISEIF") and several of its grantees to support their smart grid outreach and education activities. With ISEIF in the lead, ComEd and Ameren participated in meetings and phone calls with grantees to integrate utility and grantee educational activities, educate ISEIF and grantees about smart grid technologies and smart meter benefits, and allow grantees to leverage information utilities could provide them for their educational efforts.

In January and July 2015, ISEIF provided grants to approximately 20 organizations in the ComEd and Ameren territories to support smart grid and smart meter outreach and education.

Throughout 2015, ComEd also collaborated with civic and community organizations to help educate these organizations' audiences, constituents and citizens on energy-management and smart meter benefits. Organizations included: Age Options, Chicago Public Schools, Elevate Energy, El Valor, Faith in Place, City of Chicago, Cook County Department of Environmental Control, Historic Chicago Bungalow Association, and National Latino Education Institute.

In June 2015, these organizations were invited to tour the GE smart meter assembly plant and learn more about smart meters. In September 2015, ComEd hosted a meeting where these organizations shared their activities to-date and plans for the future, and developed partnerships for cross-functional initiatives. ComEd provided smart grid and smart meter progress updates and program metrics.

Outcomes from planning and collaboration with community organizations included:

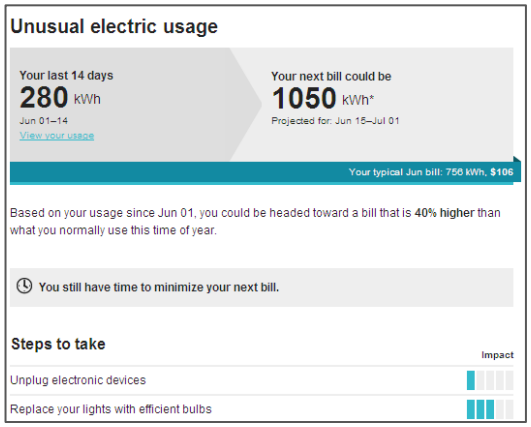
- Age Options – energy-management presentations in combination with eight Money Smarts workshops for seniors, an exhibit and presentation at the Volunteer Recognition Luncheon, and five smart meter presentations at senior meal sites.
- Chicago Public Schools – expansion of the Student Power education program during the 2015-16 academic school year for students in grades 3 through 12, resulting in participation by 81 teachers from 33 Chicago Public Schools; teacher professional development was provided by Educational Dividends.
- Chicago Urban League – provided energy-management and financial-assistance materials for office lobbies, and continued outreach for future potential planning and collaboration opportunities.
- City of Chicago – support of the Retrofit Chicago Residential Partnership group to incorporate smart meter messaging into the city's energy efficiency and retrofit outreach.
- Cook County – supported county in its update of smart grid web content and its creation of bill insert to educate local businesses on energy-efficiency programs and incentives available.
- Elevate Energy – coordinated "Smart Grid: Enabling the Future" presentation for Hourly Pricing customers and community organizations.
- El Valor – initiation of monthly ComEducation workshops for Transition Program parents, host of an Energy Fair, an exhibit at Family Fun Day and materials provided for display in the organization's office lobby. The organization also served as a satellite location to help administer financial assistance funds through ComEd's CARE programs.
- Faith in Place – Distribution of information on ComEd CARE's Nonprofit Special Hardship program to faith-based organizations in need of financial assistance to pay their electricity bills.
- Historic Chicago Bungalow Association – educational materials distributed to homeowners.
- Illinois Department on Aging – at the recommendation of department staff, continued collaboration activities with Age Options, as well as outreach for future potential planning and collaboration opportunities.
- National Latino Education Institute – educational materials provided for lobby display and job fair exhibit.

3. Customer Messaging Efforts

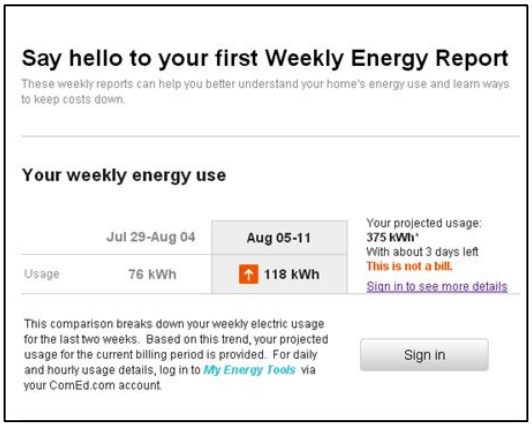
Throughout the education and outreach activities mentioned above, ComEd attended events, conducted workshops and distributed brochures to inform customers of the following initiatives and programs:

- My Energy Tools/MyAccount: Online energy-management tools that enable customers to compare their electricity usage against comparable neighbors and get personalized energy-saving tips. Customers with smart meters have access to enhanced online features, including High Usage Alerts and Weekly Usage Reports, which can help them manage their electricity usage. In April, ComEd took advantage of the redesign of My Energy Tools – now known as My Account – to revise customer materials with the new program

name and promote the smart meter-related tools and services that help customers save money on their electric bills.

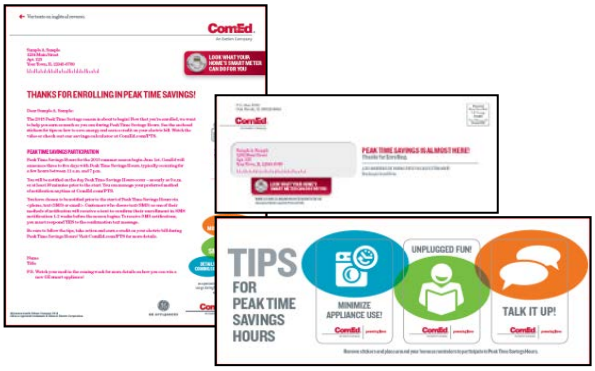


High-Usage Alert



Weekly Usage Reports

- Peak Time Savings ("PTS"): This program from ComEd, which began promotion in the fall of 2014 and launched in the summer of 2015, enables customers with smart meters to earn a credit on their electric bill by using less electricity when it is most in demand. Outreach efforts focused on promoting enrollment in PTS for the summer 2015 season, reminding customers of their enrollment and alerting enrolled customers of Peak Time Savings events.



PTS Reminder Materials

- CARE: Provides a variety of financial assistance options to help eligible low-income residents, senior citizens, disabled veterans and activated members of the armed services who have fallen behind on their electric bills. More information on CARE is available at ComEd.com/CARE.
- Energy Efficiency: Tools, tips and offerings that provide both residential and business customers with practical cost-savings tips, such as turning off lights when leaving a room, replacing traditional light bulbs with energy-efficient light bulbs, and adjusting the temperature of the refrigerator.
- Residential Real-Time Pricing ("RRTP")/Hourly Pricing: Gives customers the option to pay the hourly, market price for electricity and save money by concentrating electricity use to off-peak times when the price is lower, such as nights and weekends.

4. Market Research Efforts

Peak Time Savings Post-Event Research
Between Aug. 18 and Sept. 8, 2015, ComEd conducted telephone interview interviews with residential customers enrolled in PTS after the second PTS event on Aug. 13, 2015.

Program Awareness and Overall PTS Program Satisfaction Perceptions
Awareness of Peak Time Savings was very high at 92%, suggesting communication efforts and notifications were successful in keeping enrolled customers aware of the program. PTS was well received by participating customers, showing generally high levels of overall satisfaction, likelihood to participate during future Peak Time Savings Hours and likelihood to recommend PTS to family and friends.

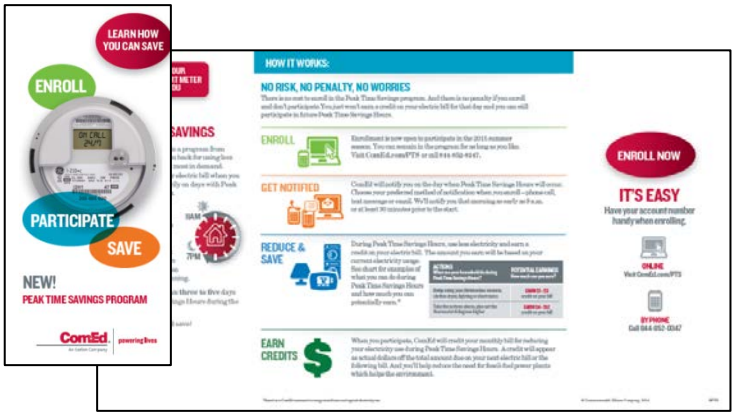
- Overall, eight in 10 (83%) customers report being satisfied with PTS (customers who gave a rating of 6-10 on a 0-to-10-point scale, with two in three (65%) rating their satisfaction at the top end of the scale (customers who gave a rating of 8-10).
- Nearly three in four (73%) customers said they would be likely to recommend the program to family and friends, with six in 10 (60%) reporting they would be very likely (customers who gave a rating of 8-10).
- Nine in 10 (91%) customers said they are likely to participate in future events, with more than eight in 10 (83%) very likely (customers who gave a rating of 8-10).

More than eight in 10 (84%) customers reported being aware of Peak Time Savings Hours announced Aug. 13. Of those aware of this event, virtually all (97%) recalled receiving the event notifications. Roughly three in four of those recalling the notifications reported taking action to save energy and recalled earning a credit from the event (both 76%).

Impact on Smart Meter Awareness and Value Perceptions
Results point to the success of the PTS program in raising awareness of smart meters and strengthening value perceptions.

- Eight in 10 (78%) PTS participants are aware that they have a smart meter at their household. This is a significant achievement when compared to Q4 2015 findings from ComEd's awareness tracking study (discussed below), where 14-35% of customers in Market Groups 1-3 (the areas where PTS was marketed) were aware they have a smart meter.
- Of those aware of smart meters, six in 10 (62%) feel having a smart meter is valuable to them (customers who gave a rating of 6-10), with nearly half (46%) assigning a very high value (customers who gave a rating of 8-10). Compared to customers in Market Groups 1-3, the same geography where PTS customers were recruited, notably more PTS customers (46%) assigned a very high value (customers who gave a rating of 8-10) to their smart meter (46% 8-10 ratings) than customers in Market Groups 1-3 (22-28%).

- Additionally, PTS has a positive impact on customers' perceptions of the value of the smart meter installed at their homes, with nearly half (48%) saying the program has made their smart meter more valuable.



PTS Awareness Marketing Materials

Awareness Tracking Study

An ongoing quantitative awareness/education tracking study, initially launched in Q4 2013, continued through 2015. This phone-administered survey monitors residential customer awareness and perceptions of the smart grid and smart meters, along with awareness of the various communication sources and messages related to smart meter deployment. The study design includes five distinct "Market Groups" based on the schedule for smart meter installations.[40] Since meter installations resumed in July 2013, meter installations and the accompanying staged communications have focused in two of the five market groups – Market Groups 2 and 3.

Awareness

Staged communications have been demonstrated to increase awareness. Ongoing customer engagement is needed to maintain awareness, build knowledge levels and strengthen value to customers.

- Starting in Q2 2014 and continuing through Q4 2015, meter installation efforts and communications occurred in Market Group 3. Q4 2015 smart meter awareness in Market

[40] Market Group definitions:

- Market Group 1: 2009 – 2010 installations (AMI Pilot area)
- Market Group 2: 2013 – 2014 installations, including some fringe in 2015 (Maywood, excluding AMI Pilot)
- Market Group 3: 2014 – 2016 installations (Crestwood, Glenbard, Chicago South, Mount Prospect, Skokie/Northbrook, Chicago North)
- Market Group 4: 2016 – 2018 installations (Joliet, Aurora, Elgin, Libertyville, Bolingbrook, University Park)
- Market Group 5: 2017 – 2018 installations (Woodstock/Crystal Lake, Streator, Rockford, DeKalb, Dixon, Freeport)

Group 3 has increased 34 significant points compared to the baseline study (28% in Q4 2013, 62% in Q4 2015). About six in 10 (61%) Market Group 3 customers have had their meter installed by the date they were interviewed in Q4 2015. Thus, a sizable proportion of Market Group 3 customers have yet to be exposed to the smart meter installation process and communication series.

- Smart meter installations and communications occurred in Market Group 2 during Q4 2013 and Q1 2014. As of Q4 2015, smart meter awareness is at 65% in Market Group 2, on par with awareness in Market Group 3 (62%) and significantly higher compared to Market Groups 1, 4 and 5 (50%, 42% and 41%, respectively).
    - Smart meter awareness in Market Group 2 peaked at 76% in Q1 2014, the quarter when installations were nearly complete in this geography. As time passed, and without ongoing communications, awareness levels dipped slightly but still remained relatively high – 64% in Q4 2013, 76% in Q1 2014, 72% in Q2 2014, 70% in Q3 2014, 66% in Q4 2014, 66% in Q1 2015, 56% in Q2 2015, 56% in Q3 2015, and 65% in Q4 2015.

Knowledge & Perceived Value

- While roughly three in 10 customers aware of smart meters reported feeling knowledgeable about smart meters, 40% of those aware felt smart meters will be of value to them personally.
- Peak Time Savings ("PTS") direct mail communications targeting customers with smart meters were launched in Q4 2014 and Q1 2015, primarily in Market Groups 1 and 2 and to a lesser extent Market Group 3. For the fifth consecutive period, customers in Q4 2015 who recalled hearing about ComEd's PTS program have higher smart meter knowledge levels and smart meter value perceptions compared to those unaware of PTS (knowledge: 39% vs. 21%, value: 54% vs. 36%). Peak Time Savings was the number-one message recalled in Market Groups 1 and 2 in Q4 2015 and among the top-four ranked messages in Market Group 3.

Post-Installation Tracking Study

An ongoing quantitative post-installation satisfaction tracking study continued in 2015 to measure and track customer satisfaction with the smart meter installation process and communications surrounding the experience. The latest results (based on meters installed in Q3 2015 and interviews completed in Q4 2015) show that four out of the eight key satisfaction questions received a satisfaction rating in excess of 90%.

- Overall satisfaction with information before installation 92%
- Satisfaction with personal interaction 94%
- Satisfaction with door hanger 94%
- Satisfaction with entire installation process 94%

5. AMI Deployment Communications

The smart meter deployment communication series ComEd employed in 2014 and 2015 was the result of testing conducted in 2013, with multiple pieces (bill insert, door hanger, post mailer) enhanced to include more specific Peak Time Savings messaging to support the enrollment

launch in October. As described in the AMI filing,[41] ComEd developed a staged-messaging and communication plan to help educate customers throughout the smart meter installation process. After building awareness of smart meters, customers are provided information on what to expect during the installation process, then engaged on how they can take advantage of smart meter-enabled, energy-management programs. Mobile-enabled options to support smart meter and energy-management information launched in October. Table 1 below describes how ComEd implemented the staged-messaging approach for meter deployments. In 2015, ComEd provided smart-meter branding to PTS and RRTP/Hourly Pricing customer materials to extend the awareness of smart meter-enabled tools and services beyond the Engage stage of the staged-messaging approach.

Timing	Channel	Message
Awareness **60-120** days prior to smart meter installation	• Bill Insert • Direct Mail • Community Events • Street Teams • Social Media/Website	• Awareness about smart meters and benefits • Awareness that meters will soon be installed in area • EE and CARE programs also available
Inform **7-30** days prior to smart meter installation	• Pre-deployment letter • Robo-call • Community Events • Social Media/Website	• Letter informs customer that a smart meter will be installed in the next 30-45 days • Automated call reminds customer of meter installation in one week • EE and CARE programs are available
Educate Day of installation	• Door knock at customer premise • Installation door hanger • "Missed You" door hanger • Social Media/Website	• Inform customer of meter installation • Inform that meter has been installed or "sorry we missed you" and need to reschedule • Educate about benefits and energy-management programs (i.e. My Account)
Engage **30 - 45 days +** after installation	• 30-day Post Mailer • 45-day Post Mailer • Peak Time Savings Direct Mail • Community Workshops • Social Media/Website	• Educate customers about tools and programs they can sign up now that customers have a smart meter

Table 1: Staged- Messaging Communications for Residential Customers

[41] Revised AMI Plan at 104-5.

(Clockwise from top left) Bill Insert, Install Door Hanger, 30-Day Post Mailer, 45-Day Post Mailer

Detailed information on each of the communication touch points and materials is outlined below.

a. Awareness Stage (pre-installation):

- Open Houses. Typically held at local town halls, these events allow ComEd to answer customer questions and address concerns. Speakers explain what smart meters are, how the installation process will work, and how customers can benefit from them. Information on CARE financial-assistance programs is also provided.
- Events. Held in municipalities where meters were scheduled to be deployed, encourages one-on-one dialogue with customers about smart meter installations and the benefits they provide. Descriptions of CARE programs, energy-efficiency ("EE") programs and energy-management tips are also provided. In post-deployment areas, customers receive information specific to energy-management programs, including instructions on how to enroll.
- Bill Insert. Included in the bills of customers who are scheduled for meter installations, this insert introduces smart meters and describes the benefits.
- Introductory Mailing. Simple, direct language, along with a few high-level facts and minimal marketing educate customers that smart meters are coming.
- Street Teams. Trained personnel greet customers in high foot-traffic areas and have short, fun and engaging interactions describing smart meters and distributing information that encourages customers to visit ComEd's website to learn more.
- Website and Social Media. ComEd.com/SmartMeter undergoes continual revisions to include updated smart meter deployment schedules, electronic versions of customer communications, as well as fact sheets and videos about smart meters. The website also provides customers with a phone number for the dedicated AMI Call Center to ask questions regarding the smart meters. Social

media messages are used to alert customers of upcoming events where they could ask smart meter-related questions and receive information on CARE, energy-efficiency programs and energy-management tips.

b. Inform Stage (pre-installation):
   - Letter and FAQs. Mailed 7-30 days prior to of smart meter installation, this mailing communicated what can be expected during smart meter installation and the actions they need to take to help ensure successful installation. The mailing also contains high-level benefits messages in an informational and factual tone. The FAQs provides more detailed instruction and refers customers to the website for more information.
   - Robo-call. Occurring approximately 7 days prior to meter installation, customers receive a short, succinct automated phone message reiterating the timing of meter installation and the actions customers should take.
   - Website and Social Media. Continued to be used at this stage.

c. Educate Stage (day of installation):
   - Door hanger. Installer attempts to contact customers to alert them of the upcoming installation and leaves a door hanger that introduces customer to the new smart meter. Because customers are more receptive to learning more at this stage, the door hanger focuses on actions the customer could take, including looking at the meter, creating an online account to get energy-management information, and learning more about programs such as RRTP/Hourly Pricing, PTS, and programs from other electric suppliers.
   - Website and Social Media. Also used at this stage to educate customers.

d. Engage Stage (post-installation):
   - Welcome Mailing. Provides customers with information about the tools and programs available with smart meters and outlines the specific steps customers can take to save energy and money. Customers are encouraged to access My Account and consider enrollment in RRTP/Hourly Pricing and PTS. To increase customer retention of this information, welcome mailings are delivered twice to customers – the first is delivered 30 days after installation and the second is delivered 45 days after installation.
   - Workshops. Held at local libraries to provide specific direction to customers about how they can benefit from smart meters. Representatives are also made available to answer customer questions.

Throughout the smart meter installation process, ComEd's External Affairs managers meet with city alderman and local municipal officials and leaders to address questions and explain how smart meters provide customers with better service and more energy-saving options. These meetings align with the aforementioned communications.

With Spanish being the second most prevalent language in the Chicago area, according to the 2013 U.S. Census Bureau survey, ComEd has made Spanish-language brochures and Spanish speakers

available at events and workshops. The pre-installation introductory mailing, letter and FAQ mailing, door hanger, post-installation welcome mailing and PTS materials were all bilingual.

Small-business customers scheduled for smart-meter installations receive similar mailings and notifications through staged-messaging communications as described above that included information about Energy Insights Online, an online tool that allows businesses to track and manage their electricity use.

To coincide with the installation of smart meters for larger Commercial & Industrial ("C&I") customers in 2015, ComEd launched a specific staged-messaging communications plan for these customers. The plan includes a combination of pre-installation letters and emails, FAQs, on-site visits and post-installation mailers, depending upon the size and type of customer. The post-installation mailer promoted both Energy Insights Online and Business Energy Analyzer, an online tool that allows businesses who use more than 100 kilowatts ("kWs") to analyze their electricity usage month-to-month and receive personalized energy-efficiency tips based on usage.

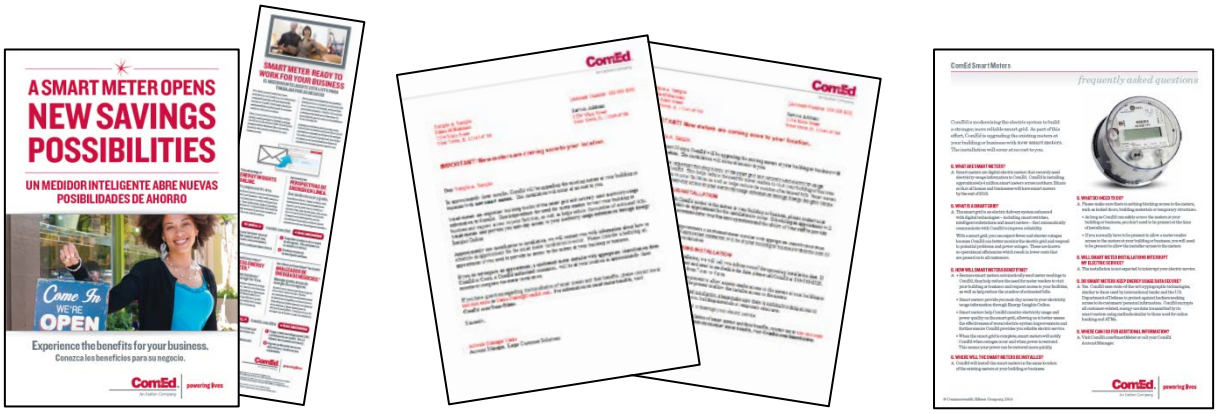
C&I customers have been segmented into two major groups: non-managed and managed customers. Non-managed customers are generally non-residential customers with peak demands under 500 kilowatts. These customers receive staged-messaging communications analogous to residential customers. Managed customers are generally non-residential customers with peak demands at or above 500 kW and have an assigned ComEd representative. The staged-messaging communications plan is described in Table 2 below:

Tier 1 (> 2 MW)	
60-90 days prior to installation	In-person meeting to discuss smart meters, associated benefits, and upcoming installation process. Leave-behind document describes smart meter and benefits.
30 days prior to installation	Pre-deployment letter or email to alert customer of what to expect during the installation of smart meters.
7-30 days prior to installation	Meeting with customer to identify and discuss meter access or other special issues.
7-30 days prior to installation	Phone call to schedule appointment for meter installation.
7 days prior to installation	Phone call to remind customer of upcoming meter installation.
30 days after installation	Phone call to review meter installation and discuss smart meter benefits.
Tier 2 (1 MW - 2 MW)	
60-90 days prior to installation	In-person meeting to discuss smart meters, associated benefits, and upcoming installation process. Leave-behind document describes smart meter and benefits.
30 days prior to installation	Pre-deployment letter or email to alert customer of what to expect during the installation of smart meters.
7-30 days prior to installation	Phone call to schedule appointment for meter installation.
7 days prior to installation	Phone call to remind customer of upcoming meter installation.
30 days after installation	Phone call to review meter installation and discuss smart meter benefits.

Tier 3 (500 kW - 1 MW)	
60-90 days prior to installation	Phone call, letter or email to discribe smart meters, associated benefits and upcoming installation process.
30 days prior to installation	Pre-deployment letter or email to alert customer of what to expect during the installation of smart meters.
7-30 days prior to installation	Phone call to schedule appointment for meter installation.
7 days after to installation	Phone call to remind customer of upcoming meter installation.
30 days after to installation	Phone call to review meter installation and discuss smart meter benefits.
National Accounts (customers with headquarter locations and numerous other locations, e.g., McDonald's or Walgreens)	
60-90 days prior to installation	In-person meeting (for headquarters located in Northern Illinois) or phone call, letter or email (for headquarters outside Northern Illinois) to describe smart meters, associated benefits and installation process. Leave-behind document describing smat meter and benefits will be provided. Approach for disseminating information to non-headquarter locations will be established during the meeting.
During installation period	Phone call, letter or email to review meter installations and discuss smart meter benefits. Leave-behind document describing smart meter benefits will be provided.
Municipalities	
30 days prior to installation	Phone call to discuss smart meters, associated benefits and upcoming installation process. Note: Municipalities have already been informed about smart meters and associated benefits.

Table 2: Staged-Messaging Communications for Larger C&I Customers

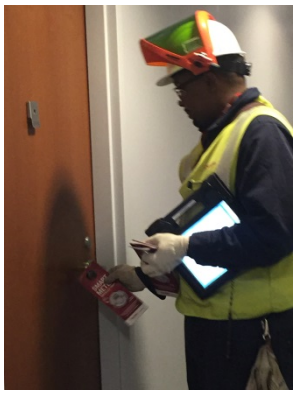
Below are samples of the communication materials that managed and non-managed customers received through the staged-communication process:



(From left) Pre-Install Mailer, 90- and 30-Day Pre-Install Letters and FAQ

In August 2015, ComEd initiated a Multi-Unit Building strategy to enhance communications to customers living in apartment buildings and condominiums. The Post-Installation Tracking Study showed that residential customers who personally interacted with a ComEd technician on the day of installation were more satisfied with their smart meter installation than customers who did not. To ensure outreach to customers in multi-unit buildings, ComEd recruits employee volunteers to personally interact with tenants and answer customer questions, while smart-meter technicians complete building installations. ComEd also stations representatives in building lobbies, where customers can receive information on smart meters, energy-management tools

and services, and energy-efficiency. ComEd also offers property managers the option of having a ComEd representative address tenants at regularly scheduled building meetings.



Installer leaving a door hanger at a unit

Volunteers at a high rise installation

6. Audience Segmented Customer Education & Awareness

In 2015, ComEd provided customized education and awareness materials to specific customer segments, such as seniors, Hispanic and small business. Moreover, ComEd provided information in Spanish for Spanish-speaking customers. This included Spanish-language presentations conducted by trained Spanish speakers, and the availability of Spanish-language collateral materials at events and workshops.

a. Seniors

In 2015, ComEd continued to utilize materials developed for seniors, including brochures with large fonts and fact sheets that focused on information found to be most important to them:

- smart meters help eliminate estimated bills and the need for meter readers to visit their homes
- how to identify a smart meter
- how to create an online account to manage electricity usage; and
- where to access no-cost energy saving tips that can be acted upon immediately

ComEd worked with advocacy groups to coordinate outreach to seniors and senior advocates. ComEd worked with Age Options of Suburban Cook County to provide five smart meter presentations at senior meal sites and eight presentations at Money Smarts financial education seminars. ComEd also hosted exhibit tables at large-scale senior events to further expand its reach to seniors and those who serve them. Events included Senior Fest in Chicago Sept. 22 and Living Well Senior Expo in Freeport, IL, Oct. 2.

In addition, ComEd targeted signature events for opportunities to increase visibility and outreach to seniors. On June 18, ComEd sponsored the Age Options Volunteer Recognition Luncheon, which included a welcome address and exhibit table for employees from senior advocate agencies. On Aug. 25-26, ComEd sponsored the Northeastern Illinois Agency on Aging Senior Lifestyle Expo, and hosted an exhibit booth and smart meter seminar.

ComEd hosted presentations at dozens of community senior centers such as Abbott Park Senior Satellite Center, Auburn Gresham Senior Center, Frisbie Senior Center, Palatine Township Senior Center and Thornton Township Senior Center, as well as Rotary and Lions club meetings. For customers who do not have the means to receive information electronically, ComEd provides a variety of printed materials including bill inserts via mail to all customers, and brochures with large print at senior events and community centers where ComEd conducts workshops.

b. Low Income

For economically disadvantaged customers, ComEd provided information through a variety of communication channels about applicable CARE grants and energy-management tips appropriate for low-income households. These channels included awareness materials, collaborations with key low-income organizations and targeted ComEd marketing channels.

The low-income awareness campaign consisted of traditional and multicultural outreach with print, radio, transit car and platform signage, and outreach to non-profit and faith-based organizations through stakeholders Elevate Energy and Faith in Place.

Low-Income Awareness Materials

ComEd provided social-service organizations with videos, brochures and signage. ComEd also provided more than 100 presentations and exhibit tables throughout the year for low-income customers and their advocates, senior groups, and veterans and military personnel, as well as distributed information about CARE to Local Administering Agencies that administer Low Income Home Energy Assistance Program ("LIHEAP"), and Community and Economic Development Associations ("CEDA") agencies. ComEd continued to build advocacy relationships with local housing authorities and faith-based organizations.

ComEd also opened 15 satellite sites in two phases to process CARE Residential Special Hardship applications in areas (Cook, Lake, Kane and DeKalb counties) affected by the closure

of Local Administering Agencies ("LAAs"). In total, the offices helped service 16,000 customers and aided in the completion of 4,500 CARE applications.

7. Financial Assistance

Pursuant to the June 2012 Order, ComEd's AMI Plan includes various means to provide assistance to customers through low-income and support programs for purposes of paying past-due arrearages and avoiding disconnection.[42] In 2015, ComEd utilized its CARE program to continue to help customers who faced financial hardship and difficulty paying electric bills. A total of $10 million was dispersed for calendar year 2015 to the following organizations:

- $6.8 million for Residential Special Hardship ("RSH"), a program designed to help eligible residential customers pay their electric bills. Customers participating in this program also received education about no-cost and low-cost ways to lower their future electric bills. Also, ComEd modified the RSH program to include two new hardship cases to reach a wider group of low-income customers that included:
    - A Low or No Income hardship case to target individuals under 60 that were underemployed at or below 250% of the Federal Poverty Guideline level, who may receive cash assistance through Temporary Assistance for Needy Families (TANF) or Utility Check vouchers only, or have no income, never worked and/or have exceeded the 3-year extended unemployment period.
    - A Transitional Situational hardship case to appeal to customers who were dealing with homelessness, rehabilitation, addiction, as well as customers who needed to re-establish services post-prison leaving halfway houses/shelters, etc. Customers under these scenarios with existing service, or those trying to re-establish a ComEd service account with a past-due balance, had to provide proof of addiction counseling, transitional residency, or other necessary documentation.
- 1.0M to support ComEd customers who were impacted by the Illinois agency of Cook County (Community Economic Development Association) outstanding unpaid financial pledges.
- $160,562 for Nonprofit Special Hardship, which focused on assisting eligible nonprofit organizations that have fallen behind on their electric bills. Organizations receiving a grant as part of this program were required to attend an educational workshop / webinar on energy management to help lower their future electric bills.
- $420,783 for ComEd Helps Activated/Veteran Military Personnel ("CHAMP"), a program to help eligible military personnel who experience hardship with paying their electric bills. Participating military personnel also received education about no-cost and low-cost ways to lower their future electric bills.
- $6,738 for Educational Classes conducted through Chicago Urban League and Latin United Community Housing Association organizations for first-time homebuyers, and energy-management education developed and implemented with the Center for Neighborhood Technology (Elevate Energy) for nonprofit organizations.

[42] Revised AMI Plan at 95-6.

- $9,169 for Fresh Start, a program designed to help customers clear their past due arrearages and pay their electric bills.
- $618,088 for outreach and awareness, which included energy fairs, local community events, senior outreach and collaborations with local housing authorities. Other methods of communication included radio, newspaper and billboard ads through traditional and multicultural outlets, press conferences and news releases, Facebook, Twitter and ComEd.com postings, and the distribution of brochures, fact sheets and talking points to municipalities and state legislators.
- Lastly, $1.6 million was disbursed in 2015 for Percentage of Income Payment Plan ("PIPP") arrearage credits. (As of July 1, 2015, PIPP was suspended by the state of Illinois).

B. 2016 Planned Activities

1. Customer Education and Awareness

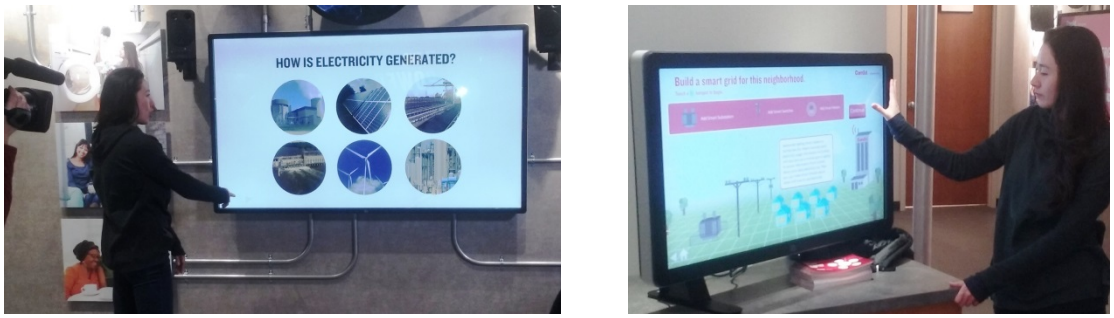
Community Events & Outreach: ComEd plans to continue its customer outreach and education described in this chapter. As learnings are analyzed from customer research and in-market findings from previous years, these efforts will be enhanced, revised, adjusted and modified to ensure effective communication to customers. Planned updates include:

- *Earth Month Challenge:* Given the success in the number of participating schools in 2015, ComEd plans to enhance this program as follows:
  - School application process is now open year-round. In previous years, the application process took place from November through February.
  - Increase in the maximum number of participating schools.

Earth Month Challenge Calendar

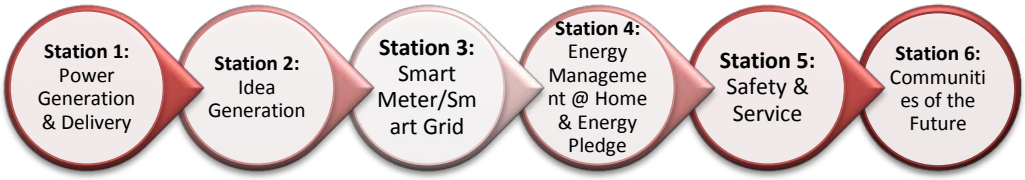
Schools Participating in a Challenge Launch Event

Smart Energy Hub: Next spring, ComEd will provide local schools with a second option for Science, Technology, Engineering and Math ("STEM") education related to smart energy enabled by the smart grid and smart meters. In April 2016, ComEd plans to offer field trips to the Smart Energy Hub at the Chicago Training Center located in the Bridgeport neighborhood. The curriculum for the field trips is based on the popular program established at the Discovery Lab at the Rockford Training Center, which has hosted thousands of students and adult learners since opening in 2013.



Smart Energy Hub at Chicago Training Center

The new Smart Energy Hub will combine interactive exhibits, video, lights and hands-on activities to create an educational experience that cannot be duplicated in classrooms. Field trip participants will take part in an interactive, "educational journey" to learn how electricity is generated and delivered, and the technologies available to manage electricity usage and save money on electric bills. Curriculum will be developed to support three groups – kindergarten to 3rd grade; 4th to 8th grade; and 9th grade through adult learners. The chart below illustrates the educational component of each station featured at the Smart Energy Hub.



ComEd is working with Field Trip Factory ("FTF"), a local educational firm, to develop a hands-on curriculum that supports the interactive displays. Additionally, FTF will provide primary marketing support to educators throughout northern Illinois. FTF will promote field trips to both the Smart Energy Hub and Discovery Lab via social media, emails, direct outreach and special events, as well as cross-market with other educational initiatives supported by ComEd. Moreover, FTF will develop videos and collateral materials that create awareness about both education rooms and provide educators with instruction on where to go to book field trips.

Community Partners: In addition to the work outlined above, ComEd will continue to collaborate with the Illinois Science and Energy Innovation Foundation ("ISEIF") and support its new and existing grantees on outreach and education activities and projects as needed. Outreach and education opportunities will be provided to keep organizations informed of smart grid and smart meter progress throughout the ComEd service territory, and facilitate collaboration among community organizations.

ComEd also plans to continue collaboration with additional community organizations as they provide energy-management and smart meter-benefit education to their audiences, constituents and citizens. These organizations include Age Options, Chicago Public Schools, City of Chicago, Elevate Energy, El Valor, Faith in Place, Historic Chicago Bungalow Association, Museum of Science and Industry, National Latino Education Institute and Shedd Aquarium, ComEd will

work with each of these organizations to perform smart meter educational activities with their audiences, as needed.

2. Customer Engagement Communications

ComEd will continue its awareness/education tracking study and the post-installation satisfaction study throughout 2016, as described in Section 3 of this chapter.

As an extension of the established staged-messaging communication strategy, ComEd will also initiate a series of mailings promoting emerging smart meter-enabled technologies that can help customers save energy and money. The mailings will include a smart-meter "identifier" to help customers make the connection that these programs and services are made available by smart meter-enabled technology. The identifier, illustrated below, is designed to help customers

recognize the savings benefits made available through smart meter technology.

Smart Meter Identifier

In 2016, ComEd plans to implement a Peak Time Savings algorithm that includes PRIZM data and other variables, to help identify customers with the greatest potential to save, so ComEd can target these customers with additional mailings.

3. Communications for Residential Customers

a. Customer Testing of Existing Communications Series

Given that the existing staged-communications series has been in market since 2013, ComEd will evaluate re-testing both the current approach and messaging with customers to ensure these elements still resonate with customers.

4. Financial Assistance

ComEd will continue to provide financial assistance through the programs described in Section IV.A.5. Additionally, ComEd's low-income and support programs will provide assistance to aid eligible customers in paying past due arrearages and help avoid disconnection of electric service. ComEd will accomplish this by coordinating expenditures and ongoing efforts with other providers of customer education and assistance, such as Local Administering Agencies ("LAAs"), social service agencies, local churches and faith-based organizations to increase awareness of assistance programs and to explore new approaches to customer financial assistance program planning and design.

V. METRICS AND MILESTONES

The following table contains the set of tracking measures the Commission approved for inclusion in the AMI Plan, including measures that ComEd agreed to report on via collaborative sessions with external stakeholders. The purpose of the table is to provide the required information and demonstrate the progress made during the prior calendar year regarding these measures. Results will be refreshed in the AIPR filing over the seven-year deployment period. The June 2012 Order also directed ComEd to include in the AIPR a baseline for each measure.[43] ComEd proposes to use the 2012 results – or the first year a measure is reported if other than 2012 – for each measure as the baseline.

As also noted in Chapter II.A of this Report, the data in the table below indicates that the overall AMI meter program is progressing as scheduled, and the plan for full deployment is being executed on-time and in-budget. None of the data points captured indicate an inability for ComEd to execute the deployment according to the approved plan. As meter deployment progresses throughout the service territory, many of the measures identified will become more meaningful and indicative of quantitative progress towards completing full deployment of AMI meters.

ComEd mapped the measures below to the Revised AMI Plan to the extent possible given that all the measures in the Revised AMI Plan are not centrally located in one section. Additionally, multiple measures that are tracked relating to a single issue are all identified under one number consistent with the numbering in the June 2012 Order and the Revised AMI Plan. For example, there are four items tracked under Measure 1. For ease of identification, letters are used to differentiate these related items (e.g., 1a, 1b, 1c, and 1d are used). Further, Attachments 1-6 are specifically referenced when they can provide additional information regarding a certain measure.

[43] June 2012 Order at 19.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
1A	Customers enrolled in Peak Time Rebate, Real Time Pricing, and other dynamic/time variant prices	Residential Customers Number of customers on a time-variant or dynamic pricing tariff offered by ComEd. Expressed also as a percentage of customers in each delivery class.	The number of customers on a time-variant or dynamic pricing tariff offered by ComEd are as follows: Residential - Single: 8,473 (0.4%) Residential - Multi: 605 (0.1%) Residential - Single (Space Heat): 157 (0.5%) Residential - Multi (Space Heat): 155 (0.1%)	The number of customers on a time variant or dynamic pricing tariff offered by ComEd are as follows: Residential - Single: 9,261 (0.4%) Residential - Multi: 772 (0.1%) Residential - Single (Space Heat): 244 (0.7%) Residential - Multi (Space Heat): 256 (0.2%)
1B	Customers enrolled in Peak Time Rebate, Real Time Pricing, and other dynamic/time variant prices	Residential Customers Number of customers served by retail electric suppliers for which the supplier has requested monthly Electronic Data Interchange delivery of interval data. Expressed also as a percentage of customers taking supply from a retail electric supplier in each delivery class.	The number of residential customers served by retail electric suppliers for which the supplier has requested monthly Electronic Data Interchange delivery of interval data is zero (0% of customers taking supply from a retail electric supplier in each delivery class.)	Please reference Attachment 1.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
1C	Customers enrolled in Peak Time Rebate, Real Time Pricing, and other dynamic/time variant prices	Small Commercial Customers Number of customers on a time-variant or dynamic pricing tariff offered by ComEd. Expressed also as a percentage of customers in the delivery class.	Zero Watt-Hour customers are taking hourly service from ComEd out of 91,275 total customers in the Watt-Hour class (0% of the class.) 1,946 Small Load Delivery (0-100kW) customers are taking hourly service from ComEd out of 247,581 total customers in the Small class (0.78% of the delivery class.)	Zero Watt-Hour customers are taking hourly service from ComEd out of 91,275 total customers in the Watt- Hour class (0% of the class.) 2,504 Small Load Delivery (0-100kW) customers are taking hourly service from ComEd out of 260,200 total customers in the Small class (0.96% of the delivery class.)
1D	Customers enrolled in Peak Time Rebate, Real Time Pricing, and other dynamic/time variant prices	Small Commercial Customers Number of customers served by retail electric suppliers for which the supplier has requested monthly Electronic Data interchange delivery of interval data. Expressed also as a percentage of customers taking supply from a retail electric supplier in the delivery class.	The number of small commercial customers served by retail electric suppliers for which the supplier has requested monthly Electronic Data interchange delivery of interval data is zero (0% of customers taking supply from a retail electric supplier in the delivery class.).	Please reference Attachment 1.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
2	Customer-side-of-the-meter devices sending or receiving grid related signals	Number of ComEd AMI meters with consumer devices registered to operate with the Home Area Network ("HAN") chip by tariffs under which customer receives delivery.	The data provided for 2013 in the 2014 AIPR was the number of meters that were set up to join the device. For 2014 and subsequent years, the AIPR Metric for HAN connected devices will be the number of "live" devices due to software advances, now that the upgraded UIQ has this data. ComEd will also use the 2014 data for the number of live devices as the baseline data going forward due to the change in methodology and results. Residential – Single: 1 Residential – Multi: 1 Residential – Single (w/Space Heat): 0 Residential – Multi (w/Space Heat): 2 Consumer devices registered through the Green Button Initiative is zero.	Residential – Single: 162 Residential – Multi: 19 Residential – Single (w/Space Heat): 1 Residential – Multi (w/Space Heat): 2 Total: 184 Consumer devices registered through the Green Button Initiative is zero.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
3	AMI Meter failures	Number of advanced meter malfunctions where customer electric service is disrupted. (A "malfunction" is a malfunction that causes the meter to become inoperable but does not include cases of tampering, service panel and service entry equipment issues, house fires, etc.) ComEd will be able to determine which of the advanced meter malfunctions were due to voltage outside design criteria.	The number of advanced meter malfunctions where customer electric service is disrupted is zero.	The number of advanced meter malfunctions in calendar year 2015 where customer electric service is disrupted is 2.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
4	AMI Meters replaced before the end of their expected useful life	Number of ComEd advanced meters replaced annually before the end of their expected useful life, including reasons for replacement that include ComEd errors. ("Replaced" means a replacement due to a malfunction that causes the meter to become inoperable, including tampering.)	The number of ComEd advanced meters replaced annually before the end of their expected useful life, itemized by tamper versus non-tamper is as follows: 334 meters replaced before the end of their expected useful life due to tampering 164 meters replaced before the end of their expected useful life due to reasons other than tampering TOTAL: 498 meters replaced before the end of their expected useful life Note: ComEd worked with the external stakeholders, and it was determined that ComEd does not have the system capability to show detailed reason codes by type. If this is needed in the future, an IT enhancement would be required.	The number of ComEd advanced meters replaced annually before the end of their expected useful life, itemized by tampering versus non-tampering is as follows: 1,670 meters replaced before the end of their expected useful life due to tampering. 9,420 meters replaced before the end of their expected useful life due to reasons other than tampering. TOTAL: 11,090 meters replaced before the end of their expected useful life. Note: ComEd worked with the external stakeholders, and it was determined that ComEd does not have the system capability to show detailed reason codes by type. If this is needed in the future, an IT enhancement would be required.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
5	Customers with net metering	Number of customers enrolled on Net Metering tariff and the total aggregate capacity of the group.	The number of unique customers enrolled on Net Metering tariff, Rider POGNM – Parallel Operation of Retail Customer Generating Facilities with Net Metering ("Rider POGNM"), as of December 31st 2012 are as follows: TOTAL: 381 unique customers (3.450 MW) 345 Residential 59 commercial The breakdown of generators by customer class and generator type are as follows: Residential (Photovoltaic Source): 284 (1.216 MW) Residential (Wind Source): 61 (0.245 MW) Commercial (Photovoltaic Source): 49 (0.756 MW) Commercial (Wind Source): 10 (1.234 MW) Note: Some unique customers have both photovoltaic and wind source generators	The number of unique customers enrolled on Net Metering tariff, Rider POGNM, as of December 31, 2015 are as follows: TOTAL: 651 unique customers (10.05 MW). 555 Residential generators. 96 commercial generators. The breakdown of generators by customer class and generator type are as follows: Residential (Photovoltaic Source): 517 (2.80 MW). Residential (Wind Source): 38 (0.21 MW). Commercial (Photovoltaic Source): 85 (4.71 MW). Commercial (Wind Source): 11 (2.33 MW). Note: Some unique customers have both photovoltaic and wind source generators.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
6A	Customer premises capable of receiving information from the grid	Number of installed AMI Meters as of the last day of the calendar year that communicate back to the head end system.	The number of installed AMI Meters as of the last day of the calendar year that communicate back to the head end system is 127,114.	The number of installed AMI Meters as of the last day of the calendar year 2015 that communicate back to the head end system is 1,830,678.
6B	Customer premises capable of receiving information from the grid	Number of installed AMI Meters as of the last day of the calendar year that communicate back to the head end system, divided by the total number of AMI meters installed.	The number of installed AMI Meters as of the last day of the calendar year that communicate back to the head end system, divided by the total number of AMI meters installed is 99.50%	The number of installed AMI Meters as of the last day of the calendar year 2015 that communicate back to the head end system, divided by the total number of AMI meters installed is 99.04 %.
6C	Customer premises capable of receiving information from the grid	Number of customers who have accessed the web-based portal as of the last day of the calendar year as a percentage of customers with AMI Meters and as a percentage of ComEd customers in that delivery class.	Please reference Attachment 1.	Please reference Attachment 1.
6D	Customer premises capable of receiving information from the grid	Number of customers who can directly access their usage data as of the last day of the calendar year as a percentage of customers with AMI Meters and as a percentage of ComEd	Please reference Attachment 1.	Please reference Attachment 1.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
		customers in that delivery class.		
7	Peak load reductions enabled by demand response programs	Load impact in MW of peak load reduction from the summer peak due to AMI enabled, ComEd administered demand response programs such as the PTS program as a percentage of all demand response in ComEd's portfolio.	The load impact in MW of peak load reduction from the summer peak due to AMI enabled, ComEd administered demand response programs such as the PTS program as a percentage of all demand response in ComEd's portfolio is zero. The RRTP estimated peak load reduction is .5KW X 9,390 customers = 4,695 KW For the desired %, 4,695 KW is divided by 1,342.4 MW (the DR portfolios total peak load reduction potential): 4.695 MW / 1,342.2 MW = .35%	The PTS estimated peak load reduction is 8.4 MW during the 2015 Peak Time Savings Hours. The RRTP estimated peak load reduction is .51KW X 10,123 customers = 5,163 KW = 5.163 MW For the desired %, 13.56 (5.163 MW + 8.4 MW) is divided by 1,323MW (the DR portfolios total peak load reduction potential 13.56 MW/1,323MW = 1%
8	Customer Complaints	Number of formal ICC complaints, informal ICC complaints, and complaints escalated to ComEd's Customer	Formal ICC Complaints: One Smart Meter Refusal; Complaint remains in progress with resolution pending. Informal ICC Complaints: Four Smart	Formal ICC Complaints: 2 Formal ICC complaints were received and handled by AMI Customer Experience. ComEd has completed process for customer contact and

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
		Relations or Customer Experience departments related to AMI Meter deployment, broken down by type of complaint and resolution. AMI Meter deployment includes AMI Meter installation, functioning or accuracy of the AMI meter, and HAN device registration.	Meter Refusals; ComEd has completed process for customer contact and resolution for each. Complaints escalated to ComEd AMI Customer Relations or Customer Experience departments: 52 smart meter refusals; ComEd has completed process for customer contact and resolution for 51; 1 remains open with clear next steps identified for resolution.	resolution. Informal ICC Complaints: 16 informal ICC complaints were received by AMI Customer Experience. ComEd has completed process for customer contact and resolution. Customer Relations handled 108 ICC smart meter complaints without escalation to AMI Customer Experience. Complaints escalated to ComEd AMI Customer Relations or Customer Experience Departments: 1,508 total Complaints. 88 such complaints related to customer dissatisfaction (Including ICC complaints above) and ComEd has completed the process for customer contact and resolution for all. 1,424 Smart meter refusals (Including ICC complaints above); ComEd has completed process for customer contact and resolution for 1,409 while 15 remain in progress with the process started. Please reference Attachment 6.

<table>
<tr><th colspan="5">2015 Tracking Metrics</th></tr>
<tr><th>#</th><th>Issue</th><th>Tracking Metrics Description</th><th>2012 Annual AMI Metrics Data, i.e. “Baseline Data”</th><th>2015 Annual AMI Metrics Data</th></tr>
<tr><td>9</td><td>Reduction in Greenhouse Gas Emissions enabled by smart grid</td><td>Reduction in Greenhouse Gas Emissions enabled by smart grid - ComEd will work collaboratively with CUB and EDF to operationalize this measure.</td><td>Please reference Attachment 1.</td><td>Please reference Attachment 1.</td></tr>
<tr><td>10A</td><td>Distributed generation projects</td><td>Number of locations and total MWs of customer owned distributed generation connected to the transmission or distribution system, broken down by connection to transmission and distribution system. (“Distributed generation” locations are those where customers take service under Rider POG – Parallel Operation of Retail Customer Generating Facilities (“Rider POG”) or Rider POGNM or successor tariffs.)</td><td>Number of locations of customer owned distributed generation connected to the distribution system, broken down by connection to the distribution system is 104 locations. Total MWs of customer owned distributed generation connected to the distribution system, broken down by connection to the distribution system is 2.40959 MWs.</td><td>Number of locations of customer owned distributed generation connected to the distribution system, broken down by connection to the distribution system is 313 locations. Total MWs of customer owned distributed generation connected to the distribution system, broken down by connection to the distribution system is 43.017377 MWs.
Total Capacity/Type of Distributed Generation:
<table>
<tr><th>Energy Source</th><th>Capacity (KW)</th></tr>
<tr><td>Battery</td><td>20500</td></tr>
<tr><td>Generator</td><td>11.5</td></tr>
<tr><td>Hydro</td><td>8.2</td></tr>
<tr><td>Natural Gas</td><td>14704</td></tr>
<tr><td>Regenerative AC Drive</td><td>1944.482</td></tr>
<tr><td>Solar</td><td>3856.195</td></tr>
<tr><td>Solar & Wind</td><td>16.5</td></tr>
</table></td></tr>
</table>

<table>
<tr><th colspan="5">2015 Tracking Metrics</th></tr>
<tr><th>#</th><th>Issue</th><th>Tracking Metrics Description</th><th>2012 Annual AMI Metrics Data, i.e. “Baseline Data”</th><th>2015 Annual AMI Metrics Data</th></tr>
<tr><td></td><td></td><td></td><td></td><td><table>
<tr><td>Wide Span Crane Regn</td><td>1705</td></tr>
<tr><td>Wind</td><td>271.5</td></tr>
<tr><td>Grand Total</td><td>43017.377</td></tr>
</table></td></tr>
<tr><td>10B</td><td>Distributed generation projects</td><td>Number of locations and total MWs of customer owned distributed generation connected to the transmission or distribution system, broken down by connection to transmission and distribution system. (“Distributed generation” locations are those where customers take service under Rider POG or POG-NM or successor tariffs.)</td><td>Regarding customer owned generation connected to the transmission system, there were zero in 2012. There was generation added to the transmission system in 2012, but these generators were all wholesale generators in the business of generation. Based on ComEd's assumptions, these would not count as customer owned generation connected to the transmission system.</td><td>Regarding customer owned generation connected to the transmission system, there were 60 MW connected to the Distribution system and over 339 MW connected to the Transmission system in 2015. There are new wholesale generator interconnections which have signed PJM Interconnection Service Agreements (ISAs) or bilateral Interconnection Agreements (IAs) and are planned to interconnect with the ComEd transmission system starting in 2016. There are currently over 190 MW of new wholesale generator interconnection connections to the ComEd transmission system that are in this phase. These include new methane, natural gas and wind generation.</td></tr>
<tr><td>11</td><td>Load served by distributed</td><td>Total sales of electricity to the grid from distributed</td><td>Rider POG sold back to the grid from Distributed Generation:</td><td>Rider POG sold back to the grid from Distributed Generation:</td></tr>
</table>

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
	resources	generation (Rider POG or POG-NM customers) divided by zone energy plus distributed generation sales, with all data provided in sortable format.	Rider POG Sales is 754,177 megawatt hours ("MWhrs") Residential Rider POG Sales is 100 MWhrs Non-Residential Rider POG Sales is 754,077 MWhrs TOTAL Zonal Energy plus Rider POG Sales is 102,367,754 MWhrs Percentage of Rider POG Sales to Total Zonal Energy is 0.74% The indicator of Distributed Generation that is behind the meter is going to be derived from the Annual Net Metering Report for Commonwealth Edison using the Average Capacity Factor data provided by EDF for 2013. Total Net Metering Solar Capacity = 1,460.14 kW * 18.5% Capacity Factor * 8760 Hours = 2,366 MWhrs Total Net Metering Wind Capacity = 1,462.31 kW * 18.5% Capacity Factor * 8760 Hours = 2,370 MWhrs Note: Further analysis and discussion will take place between ComEd and the external stakeholders to provide a	Rider POG Sales is 521,753 MWhrs Residential Rider POG Sales is 3 MWhrs Non-Residential Rider POG Sales is 521,750 MWhrs TOTAL Zonal Energy plus Rider POG Sales is 98,372,671 MWhrs Percentage of Rider POG Sales to Total Zonal Energy is 0.53 % The indicator of Distributed Generation that is behind the meter is going to be derived from the Annual Net Metering Report for Commonwealth Edison using Average Capacity Factor data provided by EDF. Total Net Metering Solar Capacity = 7,510 kW * 18.5 % Capacity Factor * 8760 Hours = 12,171 MWhrs Total Net Metering Wind Capacity = 2,540 kW * 18.5 % Capacity Factor * 8,760 Hours = 4,116 MWhrs

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
			fuller measure for future reports.	
12	System load factor and load factor by customer class	Total annual consumption for AMI meters (including, separately, small commercial customers) divided by the average demand across all AMI meters over the 5 peak hours multiplied by 8760 hours by customer class.(ComEd will work collaboratively with CUB and EDF to establish a similar measure for all system load.)	Based on the AMI consumption data for 2012 and the 5 peak hours, the following results were calculated: Residential Load factor: 30.2% Commercial Load Factor: 50.5% Industrial Load Factor: 61.1% TOTAL Load Factor: 37.2%	Based on the AMI consumption data for 2015 and the 5 peak hours, the following results were calculated: Residential Load factor: 38.1 % Commercial Load Factor: 65.0 % Industrial Load Factor: 75.1 % TOTAL Load Factor: 40.2 %
13	Products with end-to-end interoperability certification	ComEd will conduct an annual survey through a third-party provider to evaluate how products are being introduced in the smart grid enabled marketplace.	In-depth interviews with industry participants on new product offerings of smart grid enabled products and secondary research will be conducted in 2013. This will be performed in lieu of a survey until the penetration of smart grid enabled products reaches a point that a survey produces meaningful data and becomes cost- effective. To date, no smart grid enabled products have been submitted for	ComEd performed an industry assessment in 2013 for new product offerings of smart grid enabled products and services offered. This assessment was performed in lieu of a survey as the penetration of smart grid enabled products and services in the ComEd territory is still immature. Please see Attachment 1 for the updated smart grid products and services industry assessment for 2015.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
			demonstration and evaluation through ComEd's Test Bed. Please reference Attachment 3 [to 2014 AIPR] for HAN Device Interoperability. ComEd will continue to work with the external stakeholders to further evaluate how products are being introduced in the smart grid enabled marketplace.	Please see Attachment 3 for the report on test bed /technology demonstrations. Please see Attachment 5 for HAN Device Interoperability.
14	Network nodes and customer interfaces monitored in "real time"	Network nodes and customer interfaces monitored in "real time"	ComEd worked collaboratively with CUB and EDF to operationalize this measure, which yielded the following: Grid-side Network Nodes Measured as Total Number of DA Devices: 12kV DA = 2,125 and 34kV DA = 971 (DA devices) connected to the grid. Customer-side Network Nodes Measured as Total Number of Devices Registered to a Meter: 841 HAN devices for meters, though they are not actively "Monitored."	Grid-side Network Nodes Measured as Total Number of DA Devices: 12kV DA = 4,057 and 34kV DA = 1,058 (DA devices) connected to the grid. Customer Interfaces Monitored in "RealTime" Residential – Single: 162 Residential – Multi: 19 Residential – Single (w/Space Heat): 1 Residential – Multi (w/Space Heat): 2 Total: 184
15A	Grid connected	Number of locations and	The number of locations and total	ComEd has not installed any utility

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
	energy storage interconnected to utility facilities at the transmission or distribution system level	total MWs of utility owned or operated energy storage interconnected to the transmission or distribution system as measured at storage device electricity output terminals.	MWs of utility owned or operated energy storage interconnected to the **distribution** system as measured at storage device electricity output terminals is zero. ComEd has not installed any storage on either the transmission or distribution system in 2012, nor has any energy storage been certified, tested or deployed in the ComEd test bed. The storage installed on the transmission and distribution system that is part of the PJM wholesale market is 1.5 MW at one location, and it participates directly as a supply resource as part of a wind development for 2012. Please note: concerning measuring the storage installed on the transmission or distribution system participating in PJM wholesale markets, there are limitations in obtaining the information for proprietary reasons. Storage assets directly participating in PJM markets will require interconnection agreements and ComEd will have the information to track if or when these	owned or operated energy storage on either the transmission or distribution system, nor has any utility owned or operated energy storage been certified, tested or deployed in the ComEd test bed in 2015. There were 60 MW of customer owned energy storage interconnected to the Distribution system in 2015. There are also a few energy storage projects proposed to be connected to the ComEd transmission and distribution systems through the PJM interconnection queue, but are not ComEd owned or operated. They intend to be participants in the PJM wholesale frequency regulation market. There are currently proposals to connect 80.5 MW of customer owned and operated energy storage to the ComEd distribution system to participate in the PJM wholesale frequency regulation market.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
			types of supply resources enter the market. For behind-the-meter storage assets participating in the PJM through the demand response program, there is currently no requirement that PJM will share that information with ComEd. ComEd will only have knowledge of the customers that are participating in demand response, but not how customers are achieving load reductions. In terms of measuring the storage installed on the distribution system as part of the PJM wholesale market (behind-the- meter) it may not be possible unless the installation requires an interconnection agreement.	
15B	Grid connected energy storage interconnected to utility facilities at the transmission or distribution system level	Number of locations and total MWs of utility owned or operated energy storage interconnected to the transmission or distribution system as measured at storage device electricity output terminals.	The number of locations and total MWs of utility owned or operated energy storage interconnected to the **transmission** system as measured at storage device electricity output terminals is zero. ComEd has not installed any storage on either the transmission or distribution system in 2012.	ComEd has not installed any utility owned or operated energy storage on either the transmission or distribution system, nor has any utility owned or operated energy storage been certified, tested or deployed in the ComEd test bed in 2015. There were 31.5 MW of customer owned energy storage interconnected to the Transmission system in 2015. There are also a

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
				few energy storage projects proposed to be connected to the ComEd transmission and distribution systems through the PJM interconnection queue, but are not ComEd owned or operated. They intend to be participants in the PJM wholesale frequency regulation market. There are currently proposals to connect 40 MW of customer owned and operated energy storage to the ComEd transmission system to participate in the PJM wholesale frequency regulation market.
15C	Grid connected energy storage interconnected to utility facilities at the transmission or distribution system level	ComEd will conduct an annual survey through a third-party provider to estimate similar measures of non-utility storage units.	In-depth interviews with industry participants in non-utility storage markets and secondary research will be conducted in 2013. This will be performed in lieu of a survey until the penetration of non- utility storage units reaches a size that a survey produces meaningful data and becomes cost-effective. ComEd will continue to work with the external stakeholders to further estimate similar measures of non-utility storage units.	Please reference Attachment 4.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
16A	Time required to connect distributed resources to grid	ComEd's response time to a distributed resource project application, and time from receipt of application until energy flows from project to grid (distribution.)	ComEd's response time to a distributed resource project application can be referenced in the ICC guidelines, as follows: Title 83: Public Utilities - Chapter I: Illinois Commerce Commission - Subchapter c: Electric Utilities - Part 466 - Electric Interconnection of Distributed Generation Facilities. Please reference Attachment 1 for the time from receipt of application (using the application complete date as the start date for 2012 reporting) until energy flows from project to grid (distribution.)	ComEd's response time to a Distributed resource project application can be referenced in the ICC guidelines, as follows: Title 83: Public Utilities - Chapter I: Illinois Commerce Commission - Subchapter c: Electric Utilities - Part 466 - Electric Interconnection of Distributed Generation Facilities. Please reference Attachment 1 for the time from receipt of application (using the application complete date as the start date for 2015 reporting) until energy flows from project to grid (distribution.)
16B	Time required to connect distributed resources to grid	ComEd's response time to a distributed resource project application, and time from receipt of application until energy flows from project to grid (transmission.)	This does not apply since there were zero projects to apply this measurement.	This does not apply since there were zero projects to apply this measurement.
17	Voltage and VAR controls	Number and percentage of distribution lines using sensing from an AMI meter as part of ComEd's	The number and percentage of distribution lines using sensing from an AMI meter as part of ComEd's voltage regulation	The number and percentage of distribution lines using sensing from an AMI meter as part of ComEd's voltage regulation

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
		voltage regulation scheme.	scheme is as follows: Feeders that use sensing from an AMI meter as part of a voltage regulation scheme is 13 out of 5456 (0.24%).	scheme is as follows: Feeders that use sensing from an AMI meter as part of a voltage regulation scheme is 13 out of 5,456 (0.24 %).
18A	Grid assets that are monitored, controlled, or automated	Number and percentage of ComEd substations (Distribution Center Substations ("DCs"), Substations ("SSs") Transmission Substations ("TSSs") and Transmission Distribution Centers ("TDCs")) monitored or controlled via Supervisory Control and Data Acquisition ("SCADA") systems.	The number and percentage of ComEd substations (Distribution Center Substations ("DCs"), Substations ("SSs") Transmission Substations (TSSs) and Transmission Distribution Centers ("TDCs")) monitored or controlled via Supervisory Control and Data Acquisition ("SCADA") systems is as follows: Number on SCADA: DC: 479 TDC: 115 SS: 51 TSS: 169 Generating Stations: 16 Relay Points: 5 Percentage on SCADA: DC: 99% TDC: 100% SS: 100% TSS: 100% Generating Stations: 100% Relay Points: 100%	The number and percentage of ComEd substations (Distribution Center Substations (DCs), Substations (SSs), Transmission Substations (TSSs), and Transmission Distribution Centers (TDCs)) monitored or controlled via Supervisory Control and Data Acquisition (SCADA) systems is as follows: Number on SCADA: DC: 479 TDC: 115 SS: 51 TSS: 169 Generating Stations: 16 Relay Points: 4 Percentage on SCADA: DC: 99 % TDC: 100 % SS: 100 % TSS: 100% Generating Stations: 100 %

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
				Relay Points:100 %
18B	Grid assets that are monitored, controlled, or automated	Number and percentage of ComEd distribution circuits (4kV, 12kV and 34kV) equipped with automation or remote control equipment including monitor or control via SCADA systems.	The number and percentage of ComEd distribution circuits (4kV, 12kV and 34kV) equipped with automation or remote control equipment including monitor or control via SCADA systems is 5,168 distribution circuits (99% of total). Specifically, circuits with 12kV DA =1,169 circuits (24% of the system circuits.)	The number and percentage of ComEd distribution circuits (4kV, 12kV and 34kV) equipped with automation or remote control equipment including monitor or control via Supervisory Control and Data Acquisition (SCADA) systems is 5,155 distribution circuits (99 % of total). Specifically, circuits with 12kV DA = 1,634 circuits (32 % of the system circuits and 42 % of the total 12kV circuits).

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
19	Customers connected per automated circuit segment	Average number of customers per automated three phase 12kV line segment. (An "automated line segment" is a segment of 12 kV three phase mainline circuit between automated devices which include circuit breakers, reclosers, automated switches, etc.; A "customer" is a ComEd account connected on the automated 12kV three phase line segment.)	The average number of customers per automated three phase 12kV line segment is 638.	The average number of customers per automated three phase 12kV line segment is 529.
20	Improvement in line loss reductions enabled by smart grid technology	Improvement in line loss reductions enabled by smart grid technology - ComEd will research the uncertainty in line loss measurement collaboratively with CUB and EDF.	ComEd will work with CUB and EDF to develop a full and practical measure of Line Loss Reductions as enabled by smart grid investments, by exploring the capability of calculating Line Loss reductions realized through items such as the following: More efficient equipment Increased use of distributed generation that is located closer to the load	Training was performed on feeder preparation for energy efficiency and implementation of VVO. A team was formed to review and understand the suggested methodologies and how to integrate the suggestions into our system. The team has used the methods to choose a station for the implementation of a VVO project.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
			Optimized power flows Volt/VAR optimization Improved power factor The parties will hold stakeholder workshops in 2013 to identify the best approach to achieve this measure in Illinois, including strategies for better data collection.	Plans are being developed for the necessary station upgrades. Studies have been performed on the feeders fed by the pilot station to identify the necessary work to implement VVO at the new pilot station. Plans are currently being drawn up to be issued in the first quarter of 2016 to implement the necessary changes on these pilot feeders.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
21	Tracking Actual Costs	The actual cost of the AMI deployment costs that ComEd has incurred, including both one-time costs and on- going operating costs	The actual cost of the AMI deployment costs that ComEd has incurred, including both one-time costs and on-going operating costs is as follows: Actual Costs Incurred (000's) not including PTR: One-time CAP - $272 One-time O&M (if applicable) - $12,410 Ongoing CAP - $22 Ongoing O&M - $6,023 TOTAL- $18,728	The actual cost of the AMI deployment costs that ComEd has incurred, including both one-time costs and on-going operating costs is as follows: Actual Costs Incurred (000's): One-time CAP - $243,495 One-time O&M (if applicable) $37,564 Ongoing CAP - $117 Ongoing O&M - $22,292 TOTAL- $303,468
22	Customer Applications	Bill impacts associated with the costs for implementation of ComEd's AMI Plan for low, average, and higher usage level customers pursuant to approved rates and surcharges. The usage level calculations will	Please reference Attachment 1 for the metric data and Attachment 2 for supporting documentation.	Please reference Attachment 1 for the metric data and Attachment 2 for supporting documentation.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
		be values for a "typical" customer at the 25th, 50th, and 75th percentile of total usage for each applicable delivery service class.		
23	Customer Applications	Number of customers that have created and viewed an account on ComEd.com – by usage levels, customer class, and low income customers. An account on ComEd.com is necessary for viewing the web portal.	Please reference Attachment 1.	Please reference Attachment 1.
24	Customer Applications	Number of customers with ComEd.com accounts that have viewed the web portal - by usage levels, customer class, and low income customers	Please reference Attachment 1.	Please reference Attachment 1.
25	Customer Applications	Change in customers' energy consumption for customers that have viewed the web portal. ComEd will work with the web	The My Energy Tools web portal became available to all ComEd residential customers through their ComEd.com account in September 2012. Given the short timeframe this	ComEd has continued to work with its web presentment vendor to develop and vet a methodology for measuring energy savings by customers that have viewed the web

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
		presentment vendor to define the business processes necessary to track an energy usage impact of accessing the web portal.	was available to customers and the time needed to discern savings from customer billing data following their access to the web tools and subsequent actions taken to reduce their usage, there are no savings to report at this time. More robust analytics are expected as a greater number of customers begin accessing the My Energy Tools web portal and additional billing data can be utilized to measure savings in the future.	portal. The 2015 methodology has changed from the prior year. The new methodology is explained below and provides a higher confidence level in calculating the metric. Please reference Attachment 1 for a full description of the methodology. **2015 Results** The information below displays calendar year 2015 energy efficiency savings from web among ComEd customers who logged-in for the first time in calendar year 2015 and had sufficient data to be included in the analysis. <u>Electric Savings Results</u> Percent savings (%): 0.8% +/- 0.3% Savings per customer per day (kWh): 0.20 +/- 0.08 Total customers: 34,623 Total savings (MWh): 1,166 +/- 484 Note: Savings estimates are

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
				statistically significant at the > 95% level. Margin of error represents 95% confidence interval.
26	Customer Applications	Number of customers enrolled in the Residential Real Time Pricing ("RRTP") program (ComEd's hourly pricing program) by usage levels, customer class, and low income customers.	Please reference Attachment 1.	Please reference Attachment 1.
27	Customer Applications	Number of customers enrolled in any future Time of Use ("TOU") program that ComEd might offer by usage levels, customer class, and low income customers.	The number of customers enrolled in any future Time of Use ("TOU") program that ComEd might offer by usage levels, customer class, and low income customers is zero.	The number of customers enrolled in any future Time of Use ("TOU") program that ComEd might offer by usage levels, customer class, and low income customers is zero.
28	Customer Applications	Number of customers enrolled in ComEd's PTR program by usage levels, customer class, and low income customers.	The number of customers enrolled in ComEd's PTR program by usage levels, customer class, and low income customers is zero.	Please reference Attachment 1.
29	Customer Applications	Number of deposits required, disconnection notices, and disconnections for nonpayment for all	Please reference Attachment 1.	Please reference Attachment 1.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
		customers and, if applicable, by low income customers. Other "key indicia associated with credit and collection activities targeted to low income customers" may be incorporated in the project plan's business process redesigns for future implementation.		
30	Customer Applications	If further information is required to allow ComEd to track vulnerable populations and that information is not easily available (or only at significant cost) then ComEd should provide an explanation of the barriers to tracking vulnerable populations.	Please reference Section IV of Appendix A to this Report - Vulnerable Customers.	Please reference Section IV of Appendix A to this Report - Vulnerable Customers.
31	Customer Applications	ComEd should further identify what measures would be necessary to protect consumer privacy in tracking vulnerable populations.	Please reference Section IV of Appendix A to this Report - Vulnerable Customers.	Please reference Section IV of Appendix A - Vulnerable Customers.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
32	Customer Applications	The definition and identification of such groups should be discussed with stakeholders and Staff to develop a methodology to be included with the modified AMI Plan. To the extent that is not possible, it should be included with the first annual filing.	Please reference Section IV of Appendix A to this Report - Vulnerable Customers.	Please reference Section IV of Appendix A - Vulnerable Customers.
33	Customer Outreach & Education	Awareness and Education - Awareness and understanding of AMI technology and benefits (survey metric)	6,032 surveys were collected for awareness and understanding of AMI technology and benefits.	4,512 surveys were collected for awareness and understanding of AMI technology and benefits.
34	Customer Outreach & Education	Customer Experience and Engagement - Understanding of AMI Technology (Customer Experience/Engagement Research and Customer Experience Tracking).	74 Community Events were conducted about Understanding AMI Technology.	104 Community Events were conducted about Understanding AMI Technology.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
35	Customer Outreach & Education	Community Outreach - # of community events and # of direct interactions	Community Outreach included: 74 Community Events conducted and 50,871 direct interactions.	Community Outreach included: 104 Community Events conducted and 39,193 direct interactions. 83 Smart Meter Outreach and Education Truck Events conducted and 20,537 direct interactions. 133 Street Teams conducted and 17,312 direct interactions
36	Customer Outreach & Education	Local Media - # of articles that appear in local media	1,125 articles appeared in local media.	1,412 articles appeared in local media. 66 smart meter-related press releases were issued.
37	Customer Outreach & Education	Internal newsletter (# of articles in newsletter)	37 articles were included in the internal newsletter.	16 articles were written for internal newsletters.
38	Customer Outreach & Education	Customer Experience and Engagement - Meter Installations complaints/claims (Rapid Response Situational Assessments)	55 Meter Installations complaints/claims.	Received in 2015: 1,508 Meter installation complaints. Please refer to data source attachment for Metric 8 for additional information related to meter installation complaints. 89 Claims, 79 of which were denied, 10 of which were approved and zero pending. There was one rapid response assessment.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
39	Customer Outreach & Education	Customer Experience and Engagement - # of installation appointments (tracked by AMI Deployment team)	Zero installation appointments.	There were 86,210 installations completed through appointments.
40	Customer Outreach & Education	Community Outreach - # of customer organizations contacted	1,098 organizations were contacted as part of Community Outreach.	598 organizations were contacted as part of community outreach.
41	Customer Outreach & Education	Community Outreach - # of customer communication methods deployed	17 communication methods employed as part of Community Outreach.	19 communication methods were employed as part of community outreach.
42	Customer Outreach & Education	Awareness and Education - # of advocates and ambassadors informed	70 Ambassadors were contacted and informed.	110 Ambassadors were educated and utilized.
43	Customer Outreach & Education	Awareness and Education - # of surveys completed at events	6,032 surveys were collected at events.	4,512 surveys were collected at events.
44	Customer Outreach & Education	Measurement of Energy management Education & Outreach events + Interactive items	Community outreach included: 74 Community Events conducted and 50,871 direct interactions.	Community Outreach included: 104 Community Events conducted and 39,193 direct interactions. 83 Smart Meter Outreach and Education Truck Events conducted and 20,537 direct

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
				interactions. 133 Street Teams conducted and 17,312 direct interactions. AMI Residential Advertising included: 1,437,755,040 Out of Home Advertising Impressions. 47,231,671 Digital Advertising Impressions. 193,131 Digital Advertising Clicks. 4,536,628 Print Advertising Impressions. AMI Business Advertising included: 7,339,108 Digital Advertising Impressions 10,001 Digital Advertising Clicks 178,000 Print Advertising Impressions
45	Customer Outreach & Education	Measurement of the Speaker's Bureau Program	3,537 interactions related to the Speaker's Bureau Program.	A total of 118 AMI Workshops and Senior Outreach events and 8,514 direct interactions.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
				A total of 118 CARE Workshops and table events and 14,970 direct interactions.
46	Customer Outreach & Education	Measurement of the Youth Ambassador Program	2,332 direct contacts in the Youth program; 70 Youth Ambassadors.	110 students participated in the Youth Ambassador Program and 3,582 direct interactions.
47	Customer Outreach & Education	Measurement of Faith- based and Low Income Outreach	19 direct interactions; 900 organizations contacted for Faith-based and Low Income Outreach.	A total of 118 CARE Workshops and table events and 14,970 direct interactions. CARE Advertising in 2015 included the following: 99 Facebook Posts. 2,423 emails sent to customers. 107,193 visits to the CARE website. 58,712,988 CARE media impressions.
48	Customer Outreach & Education	Measurement of Email Marketing	378,315 email subscribers; 7 emails sent to customers; 6,287 clicks.	An average of 410,652 subscribers were each sent 11 emails resulting in 2,789 clicks.
49	Customer Outreach & Education	Measurement of Energy @ Home and Bill Inserts program	1 article developed for newsletter; 3.1M bill inserts for residential; 295,000 bill inserts for commercial	837,873 bill inserts were sent to residential and commercial customers.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
			as a part of the bill insert program.	
50	Customer Outreach & Education	Measurement of Direct Mail for PTR and Web Tools	This does not apply for 2012.	1,815,901 post-deployment welcome mailers were sent to residential and commercial customers.
51	Customer Outreach & Education	Measurement of Videos and Brochures	5 videos created with 22,093 views.	1,037,784 introductory mailers were sent to residential and commercial customers. 1,031,843 Pre-Deployment Letters were sent to residential and commercial customers.
52	Customer Outreach & Education	Measurement of Online and Social Media Outreach	Online and Social Media Outreach Measurements: Number of Stories Promoted on ComEd Facebook page is 26. Number of Likes on Facebook is 295. Number of Times a Story was Shared on another Facebook page is 16. Number of Engaged Facebook Users (the # of people who have clicked on a post) is 375. Number of Facebook Users who saw a Post from ComEd in 2012 is 72,789. Number of Blog Stories and Conversations with Mommy bloggers is 1. Number of Facebook Interactions with Games is	213 community event posts were promoted on Facebook and Twitter, resulting in 1,264 direct interactions with customers (likes, comments, retweets and favorites). 90,028 people visited the ComEd Smart Meter website. 28,810 people visited the ComEd Smart Grid website. 4,004 people visited the ComEd Municipal website.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
			4,489. Number of People who Visited ComEd.com/Smart Grid is 9,560.	
53	Customer Outreach & Education	Measurement of Teacher Partnership	This does not apply for 2012.	Completed 42 field trips at the Rockford Training Facility, educating 2,881 attendees.
54	Customer Outreach & Education	Measurement of Municipal Toolkit and Experimental Marketing Materials	Municipal Toolkit and Experimental Marketing Materials Measurement is 120 Direct interactions.	Held 346 meetings with customer groups. Held 597 meetings with local officials. Led 13 field tours for local officials.
55	Customer Outreach & Education	Measurement of Municipal Event Speakers, Bureau Town Halls	For Municipal Event Speakers and Bureau Town Halls there were: 2,601 informational meetings with customers. 1,000 informational meetings with local officials. 30 field tours with local officials.	Held 346 meetings with customer groups. Held 597 meetings with local officials. Led 13 field tours for local officials.
56	Customer Outreach & Education	Measurement of Municipal Online Web	16,406 site visits to ComEd Municipal Website.	4,004 people visited the ComEd Municipal website.
57	Customer Outreach & Education	Measurement of Outreach Materials - Interactive items	38,752 interactive gameplay participants.	28,964 gameplay participants.

2015 Tracking Metrics				
#	**Issue**	**Tracking Metrics Description**	**2012 Annual AMI Metrics Data, i.e. "Baseline Data"**	**2015 Annual AMI Metrics Data**
58	Customer Outreach & Education	Measurement of Awareness Tracking	The 2012 Baseline measurements for awareness tracking were: Percentage aware of Smart Grid: 43% Percentage aware of Smart Meter: 26% Percentage Knowledgeable among those aware of Smart Grid: 29% Percentage Knowledgeable among those aware of Smart Meter: 33%	The 2015 measurements for awareness tracking are as follows: Percentage Aware of Smart Grid: 35%-40% Percentage Aware of Smart Meter: 42%-54% Percentage Knowledgeable Among Those Aware of Smart Grid: 23%-31% Percentage Knowledgeable Among Those Aware of Smart Meter: 26%-31% Percentage Valuable Among Those Aware of Smart Grid: 42%-49% Percentage Valuable Among Those Aware of Smart Meter: 39%-44%
59	Customer Outreach & Education	Measurement of Customer Experience and Message Testing	$200,000 spent on market research and customer experience tracking.	$141,910 spent on market research and customer experience tracking.
60	Customer Outreach & Education	Measurement of Staff dedicated to the program	4 dedicated FTEs for EIMA Program Customer Outreach.	2 dedicated FTEs for EIMA Program Customer Outreach.