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**Ameren Illinois  
Advanced Metering Infrastructure (AMI)  
Annual Update  
April 2016**

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## Introduction

In accordance with the requirements of Public Acts 97-616 and 97-646, Ameren Illinois Company (Ameren Illinois) has prepared this Advanced Metering Infrastructure (AMI) annual report to outline expenditures and accomplishments achieved through December 2015. Specifically, Section 16-108.6(e) of the Public Utilities Act (Act) requires:

(e) On April 1 of each year beginning in 2013 and after consultation with the Smart Grid Advisory Council, each participating utility shall submit a report regarding the progress it has made toward completing implementation of its AMI Plan. This report shall:

- (1) Describe the AMI investments made during the prior 12 months and the AMI investments planned to be made in the following 12 months;
- (2) Provide sufficient detail to determine the utility's progress in meeting the metrics and milestones identified by the utility in its AMI Plan; and
- (3) Identify any updates to the AMI Plan.

The report also provides a summary of the forecasted expenditures and goals for 2016 (January-December), an update on Consumer Education and Communications, AMI metric requirements, and AMI tracking mechanisms.

## Consultation with the Smart Grid Advisory Council (SGAC)

As identified in the Introduction, Ameren Illinois presented its Advanced Metering Infrastructure Update on March 8, 2016 in Chicago at the Illinois Commerce Commission office. SGAC members present were the following:

- Cholly Smith, Chair
- Michael Cornicelli
- Mark Harris
- Sharon Hillman
- Kristin Munsch

## AMI Program Implementation Strategy

The four stages below summarize Ameren Illinois' high-level plan for implementing information technology hardware, software applications, and business processes to provide accurate and timely billing, remote connect/disconnect functionality and customer access to usage information. As outlined in subsequent sections of this document, Ameren Illinois' 2015 program achievements includes functionality through the end of Stage 3 of the implementation plan.

Stage 0	Stage 1	Stage 2	Stage 3
Install foundational meter data management system and AMI system	Process and Bill Residential and Commercial/Industrial customers	Upgrade processes and system to support remote connect/disconnect	Peak Time Rewards Program
Prepare systems and processes for installation of 2-way communication network	Integrate AMI and MDM systems and prepare for billing Transfer AMI interval data to Retail Energy Suppliers	Revenue Protection Analytics	Event processing such as outage notification
Manage Asset Information	Customer Web Portal 	Provide Non Billing Interval Data to RES	
Q2 2014 - Complete ✓	Q4 2014 – Complete ✓	Q2 2015 – Complete ✓	Q4 2015– Complete ✓

## 2015 AMI Program Accomplishments

- Implemented Remote Service Orders
- Deployed Operational Analytics
- Provided Non Billing Interval Data to Retail Electric Suppliers
- Created Aggregated Anonymous Data Queries
- Developed Peak Time Rewards (PTR) Program
- Integrated AMI with Outage Management Processes
- Enhanced Cybersecurity Plans and Executed Testing
- Processed and Billed Commercial and Industrial Customers
- Deployed Residential Bill and Usage Alerts (Email & Text) Functionality
- Tested and Validated Consumer Devices Pairing with the AMI Meters (Home Area Network)
- Enhanced and Distributed Customer, Employee, and Stakeholder AMI Communications

## 2016 AMI Program Goals

- Implement Home Area Network Device Registration
- Rollout New Data Analytics
- Commence Peak Time Reward Events
- Continue Tests of AMI Architecture for Cybersecurity
- Build Customer Awareness of Self-Service Functionality
- Accelerate AMI 62% Deployment

## 2015 Program Accomplishments

### Achieved 2015 AMI Electric Device Deployment Goals

Ameren Illinois exceeded the 2015 targets for electric meters as seen in the table below:

AMI Device	2015 Cumulative Total Commitment	2015 Cumulative Total Installed	Variance
AMI Electric Meters	188,419	208,539	+20,120

### Implemented Remote Service Order Functionality (Includes Remote Connect/Disconnect)

Ameren Illinois implemented remote service order (RSO) functionality using over-the-air commands for AMI electric meters on residential and small business accounts. In a matter of minutes, Ameren Illinois can schedule and complete connect or disconnect orders for customers at a time that is most convenient for them. Customers can schedule their connection/disconnection of service using the Ameren Illinois website or by calling Ameren Illinois' contact center. In situations where a customer requests a disconnect to terminate service and a new customer requests a connect to start service on the same day, Ameren Illinois' developed logic to not exercise the switch, but to get a service termination read and a service start read to end and begin the separate accounts.

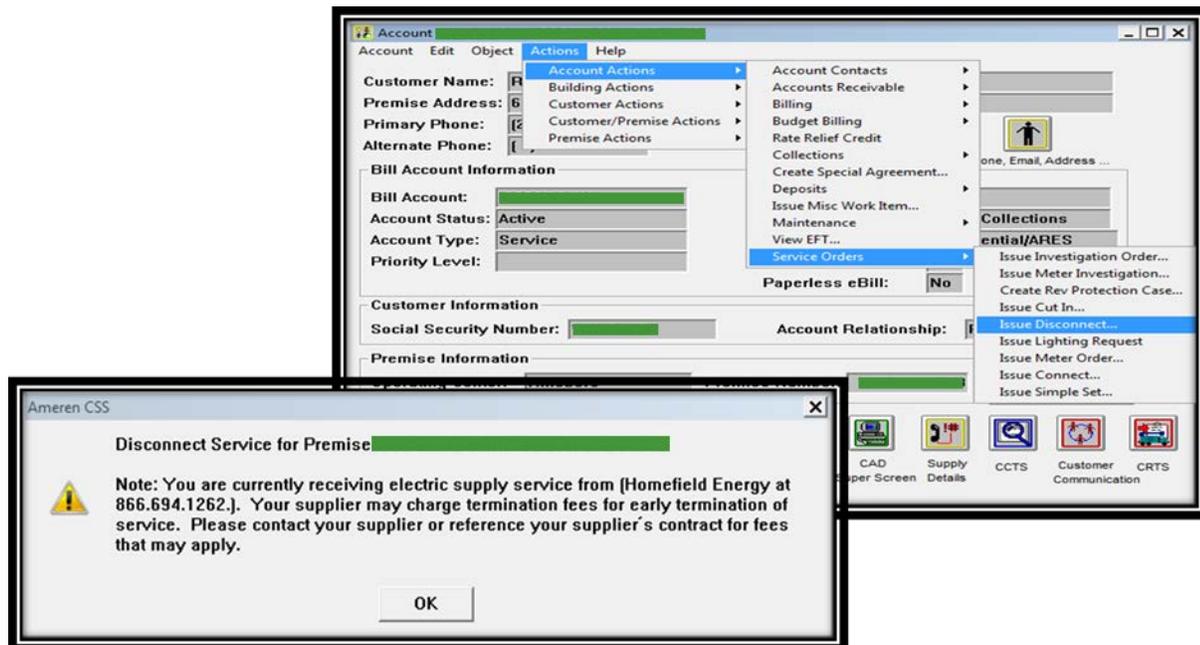
For Ameren Illinois, RSO brings greater efficiency and an additional layer of safety to the way we work. A portion of the half a million connect and disconnect orders Ameren receives annually can now be completed more safely and timely. RSO will help keep co-workers from potentially unsafe situations (animals, bad weather, etc.) when performing service order work at the premise. Additionally, our operations will reduce truck rolls, thus less fossil fuel consumption.

Ameren Illinois is also utilizing the RSO functionality to perform cut-outs on delinquent accounts. When payment criteria are met, Ameren Illinois has the ability to remotely reconnect the meter.

In October, one example of the innovative benefits of AMI was realized when one such customer had their electric service disconnected via the AMI network at 8:04 am due to non-payment of service. The customer made a credit card payment to reestablish their account and after it cleared, the AMI network had that service

restored at 8:22 am, a total outage of 18 minutes. The entire process was completed without an Ameren truck having to leave the operating center. This is a significant improvement over legacy processes that may have taken 24 hours or more and two truck rolls to restore service.

At the end of 2015, the AMI RSO successfully mitigated the need for more than 8,000 electric and 2,000 natural gas service visits.



Examples of Remote Connect/Disconnect Functionality Screens in Ameren Illinois' Customer Service System

## Deployed Operational Analytics

Ameren Illinois implemented advanced analytics focused on stuck meters, theft, meter health, and AMI deployment support for Ameren Illinois customers with AMR or AMI meters and modules using Oracle's DataRaker software-as-a-service analytics system.

The following functionalities were implemented in 2015:

1. **Stuck Meters:** Ameren Illinois implemented functionality for Gas Stuck Meter service orders in May 2015 and Electric Stuck Meter service orders in November 2015. Ameren Illinois has reduced manual efforts to address stuck meter orders by importing the AMI and AMR customer service system (CSS) Stuck Meter service orders into our DataRaker's advanced analytics to validate the need to roll a truck. In 2015, Ameren Illinois saved \$64,760 in truck rolls and efficiencies in our customer accounts department. We are projecting savings in excess of \$165,000 for 2016.
2. **Theft:** Ameren Illinois implemented two automated service orders based on an analytics test identifying Consumption on Inactive Meters in June 2015 and Isolated Outages in September 2015 for AMI and AMR meters. Using DataRaker's analytics, we are able to identify Consumption on Inactive Meters sooner than using our previous processes. We automated the generation of Theft field investigation service orders for the entire Ameren Illinois service territory. We were able to reduce 22,666 follow up orders in 2015.

3. **Meter and Module Health:** Ameren Illinois implemented tests to support the AMI Deployment effort by monitoring meter health and identifying faulty equipment quickly upon installation. We believe that this will be especially beneficial for gas modules, allowing us to identify and categorize non-working gas meters or non-communicating/non-working gas modules.
4. **Deployment Analytics for Route Cutover:** Ameren Illinois reviews AMI meter read percentages from the AMI network to confirm that a legacy billing route meets Ameren Illinois' criteria for route cutover for Over-The-Air billing.

### **Provided Non Billing Interval Data to Retail Electric Suppliers**

Ameren Illinois developed the capability to supply non billing customer specific hourly residential interval AMI data to Retail Electric Suppliers (RES). Data is accessible via Electronic Data Interchange (EDI) and the Ameren Illinois supplier portal. As required by the final orders in ICC Dockets 13-0506 and 14-0701, the retail electric suppliers need customer authorization to access customer specific usage data. Retail Electric Suppliers now have the benefit of acquiring hourly usage data as recently as the previous day's usage.

### **Created Aggregated Anonymous Data Queries**

Retail Electric Suppliers and other third parties can also request access to anonymous non billing and billing interval data. Anonymized data meets the requirements of the 15/15 rule where the dataset can be no smaller than 15 customers and 1 customer cannot exceed 15% of the aggregate usage. Today, this data is pulled manually on a per request basis. Ameren Illinois is investigating automating this functionality to minimize the need for Ameren Illinois analysts to execute the query manually.

### **Developed Peak Time Rewards (PTR) program**

Ameren Illinois implemented functionality to allow residential customer enrollment in Ameren Illinois' Peak Time Rewards program. The Ameren Illinois Peak Time Rewards (PTR) program provides rebates for customers who reduce their electricity usage during peak demand times. Known as a demand response program, PTR allows Ameren Illinois to notify customers with AMI meters in advance of anticipated peak demand times and reward those customers who respond by reducing their electricity usage below their individually calculated baselines. Customers are rewarded with credits on their bills, while Ameren Illinois benefits from increased network reliability due to the reduced stress on the energy delivery system.

Eligible customers began to receive notification of their opportunity to participate in the PTR program in October 2015. All eligible customers who enrolled by March 1, 2016 will be able to participate in the first year of PTR events which can be called as early as June 1, 2016. Customers may enroll via the Ameren Illinois call center, website, or by mailing in an enrollment form.

Eligible customers must meet the following criteria:

- Residential account
- AMI meter cutover for Over-The-Air billing
- Not on a customer generation contract (such as net metering or qualifying facility)
- May only be enrolled in one demand-response program

Events are initiated by Ameren Illinois and Midcontinent Independent Systems Operator (MISO), the regional electric grid operator. Ameren Illinois and MISO will schedule a PTR event, typically on hot and humid summer

afternoons, and notify customers of the day and time to reduce their energy in advance. Those customers who take action and reduce their energy usage below a calculated personal baseline will be rewarded with a credit on their Ameren Illinois bills. Customers may also view their usage and credits on the Ameren Illinois web portal.

Ameren Illinois has partnered with Elevate Energy to promote and manage the Peak Time Rewards program.

Peak Time Rewards	
Enrollees on 3/1/2016	10,455
Direct Mail Marketing Sent	129,400
Marketing Conversion Rate	8.1%
Eligible Customers on 3/1/2016	98,868
Eligible Customer Conversion Rate	10.8%

Sample Peak Time Rewards Mailer

## **Integrated AMI with Outage Management Processes**

In select operating centers, Ameren Illinois began utilizing outage data sent from the AMI electric meters to populate outages in Ameren’s Advanced Distribution Management System (ADMS). This helps Ameren Illinois better identify and respond to outages. To ensure that valid outages are created in the ADMS system, Ameren Illinois has implemented AMI outage filtering to reduce false outages, wasted field trips, and ensure customers are not called with estimated restoration times on known maintenance related outages. This filtering excludes normal operational work that would cause AMI meters to report being out of power. Additionally, single meter outages connected to a multi-meter transformer are also not sent to ADMS.

As the outage process matures, Ameren Illinois will continue to implement advanced outage functionality throughout our service territory.

## **Enhanced Cybersecurity Plans and Executed Testing**

### **Performed Penetration Testing on Field Area Network (FAN) Devices**

Ameren Cybersecurity partnered with Mandiant, a cybersecurity expert, to perform a penetration test on the AMI Field Area Network (meters, collectors, routers). At the conclusion of their testing, Mandiant reported that the AMI Field Area Network (FAN) was unable to be leveraged or penetrated despite technical advantages (provided encryption keys and passwords to the providers on site). Penetration teams were completely unsuccessful in subverting the security with unfettered access to the systems.

### **Transition of Vulnerability Scanners**

Ameren Cybersecurity successfully replaced the Qualys vulnerability scanners with new Rapid7 Nexpose Vulnerability Management. The previous scanners were decommissioned and replaced with three Nexpose Scan Engines for the development, disaster recovery, and production environments. Rapid7 Nexpose Vulnerability Management provides a holistic view of network connected devices, unified scanning for operating systems, applications, services, web, database, and configurations and consolidated reporting across physical, virtual, and cloud computing enterprises. Nexpose also leverages critical threat awareness from Metasploit penetration testing software. The capabilities of the new scanners offer significant improvement in the overall system security and will improve the AMI Security posture.

### **Updated the Cybersecurity Plan**

In conjunction with AMI's systems integration vendor (IBM), the Cybersecurity Team initiated a component review design (individual system settings) for AMI servers and applications as a cybersecurity plan update. The update added new component pieces such as the inclusion of the Home Area Network (HAN) to an existing set of components that are in place to ensure that allocated resources are both known and listed. All reviews and updates were completed and approved by the AMI leadership team.

## **Processed and Billed Commercial and Industrial Customers**

The billing processes and associated software changes were delivered in Q4 2014. However, due to a delay in the Commercial and Industrial polyphase electric meter development by Ameren Illinois' technology vendor, Ameren Illinois did not begin deployment of polyphase electric meters until Q3 2015 for Commercial and Industrial customers.

## **Deployed Residential Bill and Usage Alerts (Email & Text) Functionality**

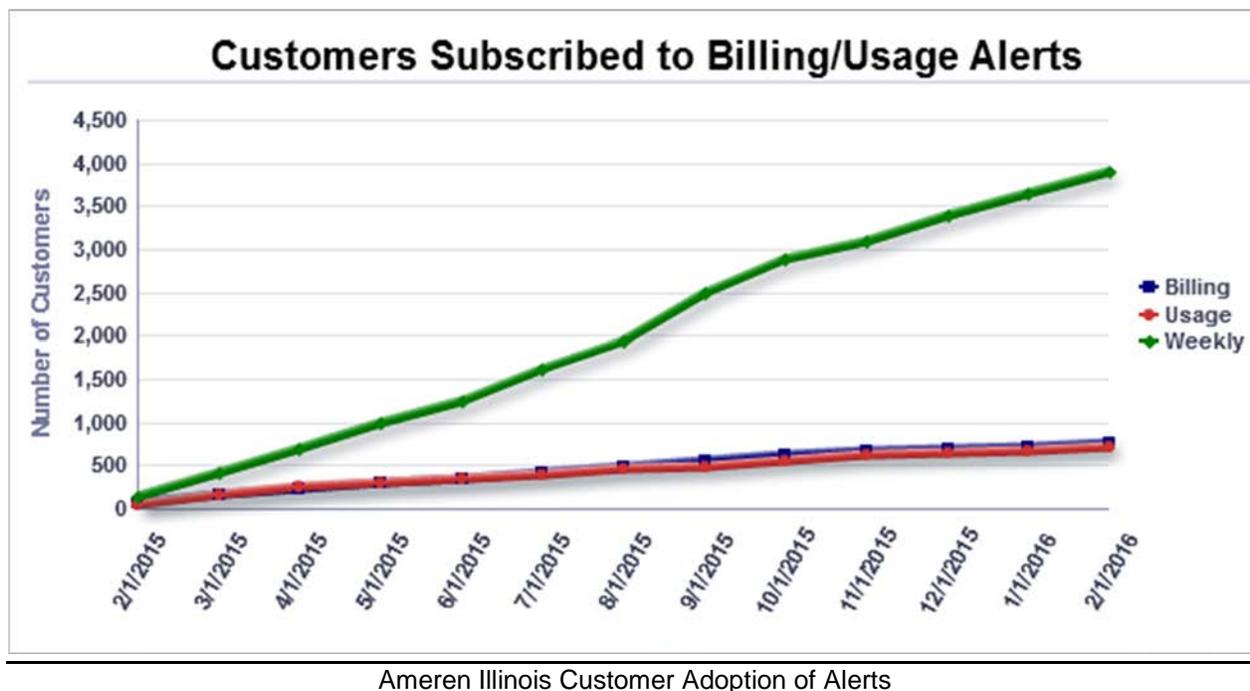
Alert functionality provides notifications to Ameren Illinois' AMR and AMI customers after an event(s) has occurred. Customers have access to weekly cost summary, usage threshold, and cost thresholds alerts. Alerts are available to AMR and AMI residential customers via text or email.

The **weekly cost summary alert** provides customers with cost estimate data including the number of days into their billing cycle at the time of the alert, their estimated cost-to-date, and their projected monthly bill based on current usage.

The **usage threshold alert** is triggered when the customer's usage-to-date exceeds the usage threshold set for a specific service by the customer. Usage thresholds are set separately for electric service and gas service. Alerts are also sent separately for electric service and gas service.

The **cost threshold alert** is generated when the customer's estimated cost-to-date exceeds the cost threshold set for all services on the customer's account.

Customer sign-up is available via the Ameren Illinois customer portal, text message, or by phone to the Ameren Illinois contact center.



The graph above shows customer adoption of alert functionality. Ameren Illinois began promoting alerts in January 2016.

### **Tested and Validated Consumer Devices Pairing with the AMI Meters (Home Area Network)**

Ameren Illinois began testing the interface of consumer devices in 2015. We partnered with Camdus to identify available smart devices and manufacturers. Our Technology Applications Center personnel validated four home area networking devices that comply with the ZigBee Smart Energy Profile and work with Ameren Illinois meters. The devices are:

- Rainforest's EMU-2 In Home Display
- Rainforest's Eagle Gateway
- Bidgely's "Home Beats" Energy Monitor (Gateway)
- Ecobee Smart Thermostat

Ameren Illinois completed the business process and technical design for both manual and automated device registration. Customers may access the validated devices on the Ameren Illinois website:

<https://www2.ameren.com/Han/ValidDevices>.

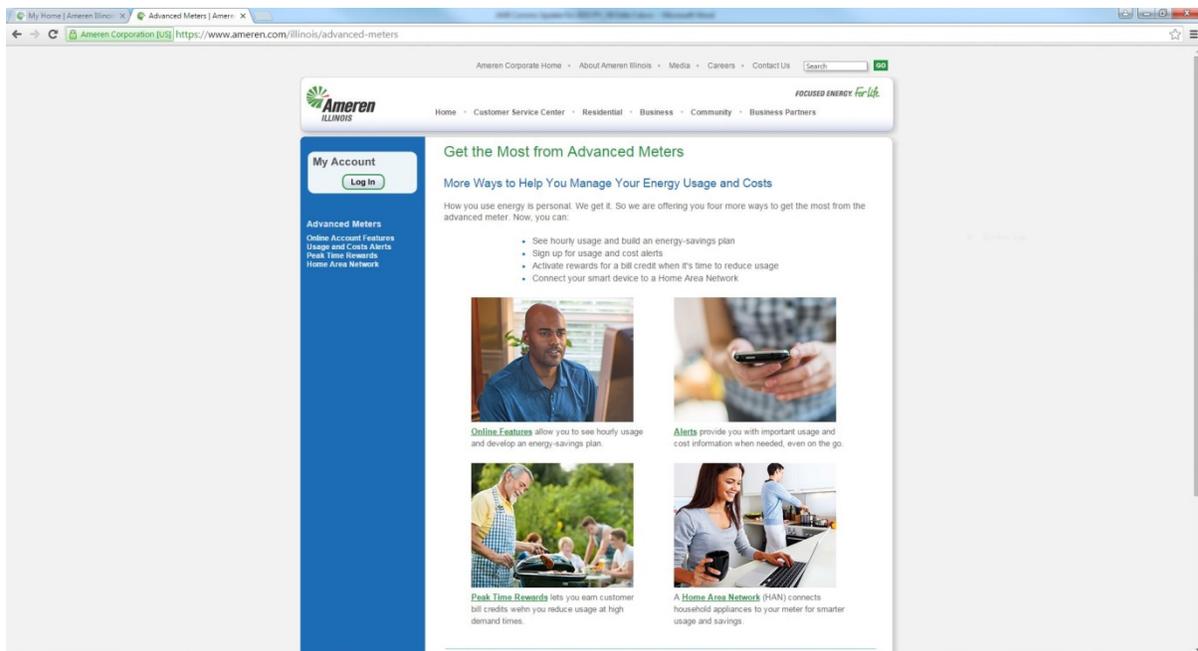
# Enhance and Distribute Customer, Employee, and Stakeholder AMI Communications

## External Customer Communications/Education

Ameren Illinois continues to utilize the customer segmentation data to aid in our communications to customers as we deploy AMI meters. The use of our customer segmentation data is being used to drive the tone of the initial customer 60-day letters. The 30-day post card and the day-of door hanger continue to be effective methods of communication to build the initial awareness for the advanced meter upgrades.

We have updated the AmerenIllinois.com website to make it easier for customers to access deployment and smart grid programs related to advanced metering.

The updated site provides links to information such as FAQ's, videos on the new features and programs, installation, and secondary research to further educate customers on advanced metering. There is also a section for downloading brochures and other communications regarding the AMI technology and Ameren Illinois' plan to improve energy delivery service.





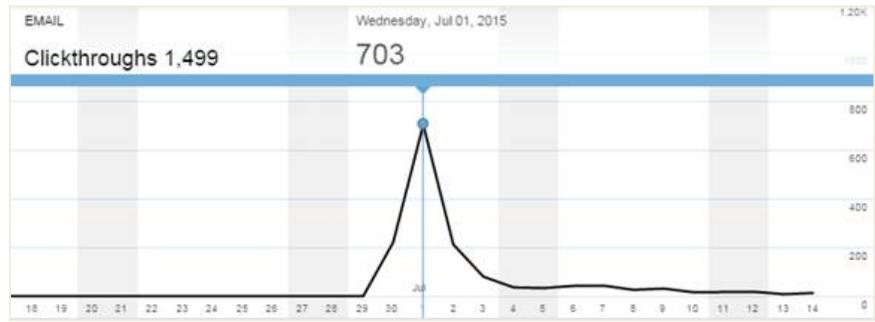
In Q2 2015, Ameren Illinois began promoting three new tabs to all customers with an online account to inform them of the new self-service features available via the web. Utilizing the customer segmentation knowledge from our 2013 Customer Segmentation study, we developed targeted HTML email templates to speak to True Believers, Cautious Conservatives, Concerned Parents, and Working Class Realists about the enhanced online account features. Our goal is to encourage customers to use the online tools and manage their energy usage and costs.

## **Communication Channels**

Social Media:

Ameren Illinois continues to engage with customers via social media by using informational videos and posts to encourage customer use of the AmerenIllinois.com self-service tools.

Social Post	Views	Likes	Shares
Web Features Navigational Video	7,000	115	13
Energy Savings Features Video	3,700	13	7
Energy Savings Plan Vignette	5,200	15	1
Green Button Vignette	3,800	34	3



**Direct Email:**

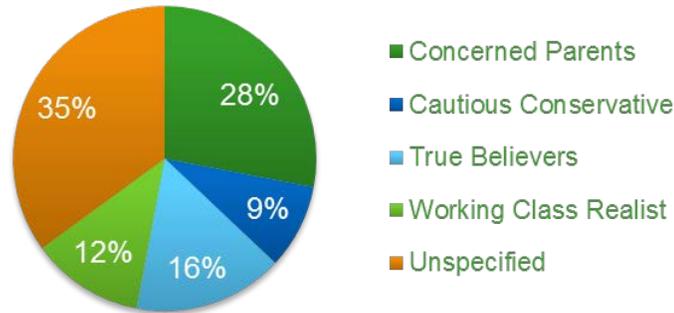
Ameren Illinois performed a one-time email blast to customers which exceeded national averages on click-through and open rates. This email blast yielded a recipient list of 86,881 with an open rate of 22%; national average is about 20.5%. The click-through rate was an estimated 8%; national average is about 2.5%.

Following are the statistics that demonstrate online customer engagement:

- 1 minute spent on New Features page
- 4 minutes spent on AmerenIllinois.com
- 62% continued to other Ameren pages
- 3.8 pages per view
- 65% accessed via desktop or laptop
- 35% accessed via mobile device

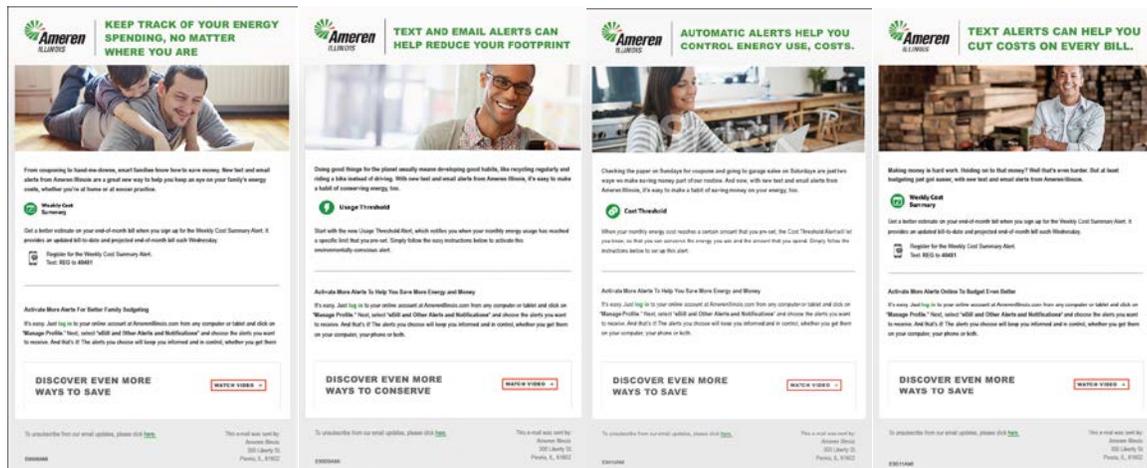
	Unique Users (Open)	Unique Users (Click)	Unsubscribe
Concerned Parent	14%	5%	0.77%
Cautious Conservative	24%	8%	0.88%
True Believer	25%	8%	0.37%
Working Class Realist	25%	7%	0.75%
Unspecified	25%	7%	0.51%

## Recipient Segmentation



Additional email templates to promote the new cost and usage alerts: Weekly Cost Summary, Cost Threshold, and Usage Threshold, were developed in 2015. Due to issues with other alerts not related to AMI, Ameren Illinois has only socialized this functionality to customers that have called into the Contact Center for other reasons. Customer segmentation continues to be of value in our effort to educate and build awareness of the benefits of AMI.

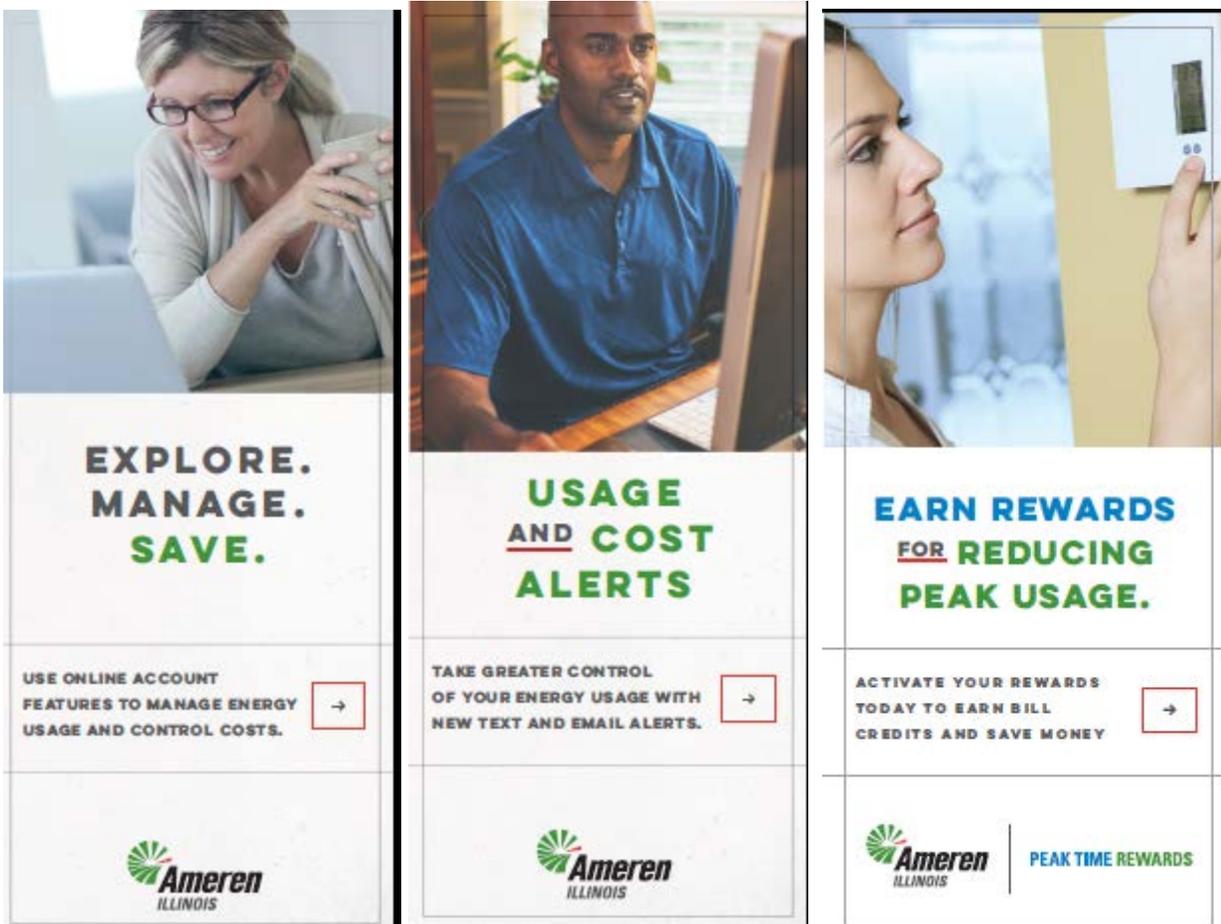
The Alerts templates leverage our customer segmentation insights.



## Brochures:

Ameren Illinois customers can download brochures to learn more about advanced metering. The Explore - Manage - Save brochure was distributed at select Ameren Illinois events in 2015.

Additionally, we encourage each installer to carry an advanced metering brochure with them at each install. This provides an on-the-spot way to educate customers as to the reason why someone other than Ameren Illinois will be on their property while allowing the installer to continue with the meter exchange. The brochure, Improving Your Energy Service provides customers with a quick overview of all of the infrastructure improvements, inclusive of advanced metering.



Sample AMI Program Brochures

**Peak Time Rewards Communications:**

The customer campaign to enroll customers in Ameren Illinois' new demand – response program started on October 1. The enrollment period for the 2016 bill credit year ends March 1, 2016. To date, this program has seen good success using a very targeted and localized approach. Direct mailers with a return business reply has yielded steady enrollment. The website, PeakTimeRewards.com has a simple and easy to use interface for customers to enroll in the program.

Following are the volume of letters distributed for Ameren Illinois PTR communications:

- Direct mail letters: 129,400 (98,868 unique eligible customers)
  - Oct 2015: 33,900 sent
  - Jan 2016: 55,600 sent (29,500 received a letter in October)
  - Feb 2016: 11,700 sent
  - Feb 2016: 28,200 sent

## Deployment Communications:

The AMI Communications team has a targeted and timely approach to communications due to the multi-year deployment of advanced meters. In an effort to keep customers informed about meter upgrades in their community, Ameren Illinois created the Advanced Meter Look-up Table. The new Advanced Meter Look Up table directly supports the deployment team efforts as it is one more way to prepare customers by providing the approximate year of deployment. It can be found on the Interactive Map page, under the **Metering: The Next Generation** page.

### Advanced Meter Look-up Table

City:  ZIP code:

## Media Partnerships to Support Customer Education

In 2015, Ameren Illinois participated in radio and newspaper interviews followed by the news releases sent to the local daily and community news media prior to the start of meter deployment in each Ameren Illinois service locale. These opportunities allow our communications team to further educate customers on the overall infrastructure improvements, meter upgrades and the future benefits that will allow customers to better manage their energy usage. Additionally, news outlets have published the news of this technology on their social media platforms such as Facebook and Twitter. The AMI Communications Team continues to monitor social media in order to address customer inquiries or misinformation.

## Stakeholder/Community Outreach:

### ISEIF Collaborative Efforts

The Ameren Illinois Communications Team has been working in collaboration with the Illinois Science and Energy Innovation Foundation (ISEIF) since its inception in 2012. As grantees come aboard to support smart grid technologies and advanced metering outreach and education, the Ameren Illinois Communications Team works with them to assist in setting the proper customer and outreach expectations and benefits of the advanced meter.

- In October 2015, Elevate Energy, our program administrator and marketer for Peak Time Rewards along with the AMI Communications lead, hosted a webinar on the new demand-response program for all of the grantees.
  - ISEIF Grantee: The University of Illinois Research Staff along with Efficient Living Illinois Public Housing Authority Energy Program, conducted a research project under the pilot name, iSmart. It was funded by ISEIF and two public housing buildings in the Ameren Illinois' service territory. The research results revealed that Illinois public housing could achieve 12 percent energy savings, on average, by implementing smarter technology that encourages behavior modifications. This could include occupancy sensors, and power strips.

### Other Outreach Events/Activities

- In April 2015, the Ameren Illinois Community Relations Team presented the AMI infrastructure improvements to the Effingham Chamber of Commerce.

- In September, 2015, the Ameren Illinois Community Relations team shared the overall infrastructure improvements, including the meter upgrades and its benefits, at the Illinois Emergency Management Training Summit held in Springfield.
- In November 2015, the AMI Project lead presented aspects of the project and meter upgrade progress at the Decatur Municipal Leaders Roundtable.
- In November 2015, the Ameren Illinois Community Relations Team in conjunction with the AMI Communications Team coordinated and supported an event in Sesser, Illinois to address customer concerns regarding high bill complaints in Southern Illinois. Ameren Illinois addressed the multi-faceted impact of the delivery charge increase which included, supply charge increases, increased costs from MISO and, a billing error with Constellation Energy. This outreach event assisted the mayor of Sesser, IL and addressed all customer concerns on a one-on-one basis.
- In December 2015, the AMI Communications team presented the new customer features and the infrastructure improvements including AMI at the Southern Illinois Mayors Association meeting. There were about 18 mayors present at the meeting.

### **Employee Internal Communications**

In continuing our effort to keep our co-workers informed, Ameren Illinois trained Remote Service Orders (RSO) and Peak Time Rewards (PTR) policies and procedures in 2015. The AMI Communications team supported organizational impact initiatives by building internal awareness around RSO and PTR. The team provided support by sharing timely and useable information for easy retention knowledge building. Ameren Illinois continues to use standard tools like the AMI Communications Share Point site - a co-worker friendly site that serves as a repository of AMI information, FAQs, videos, and presentations.

We continue to do the following:

- Co-worker FAQs – documents that outlines questions and associated answers internal stakeholders might ask about the AMI program. This document is updated over time as new features, programs and options are introduced.
- Support the Change Management/Organization Impact Team by continuing to provide information to enhance co-worker education. The AMI Communications Team developed an AMI Leadership Video that further explains the benefits of RSO and PTR for customers, co-workers, and Ameren Illinois.
- Support the AMI customer inquiry escalation process addressing concerns and questions about the AMI technology.
- Distribute personalized co-worker newsletters to inform co-workers of updates and milestones regarding AMI deployment in their work location.
- Utilize a “Leadership Letter” to share AMI updates, key topics, opportunities, and challenges.
- Support the Organizational Impact Team with communication tools and collateral for the Change Champion Network which meets on a monthly basis to communicate changes to existing Ameren Illinois processes as result of AMI. The Change Champions act as subject matter experts in their organizations to help prepare and educate their colleagues on the new and modified AMI processes.

### **Critical Communications Strategic Approach**

In 2015, AMI Communications Team implemented our Critical Communications strategy. In addition to our outreach event held in Sesser, this approach was used to address interference concerns by rural wireless internet service providers. Our communications team met with one provider in person and communicated via email and phone with other providers. To date, this approach helped us mitigate critical scenarios related to

interference. We will continue to use this strategy for issues and concerns related to AMI before, during, and after deployment, categorizing them by level of priority and engagement.

Emerging and critical issues are assigned a level of engagement based on the following criteria:

- Size: number of units/customers affected
- Frequency/duration: frequency of occurrence, duration of time
- Scope of situation: location and geographic reach
- Area of impact: system, customer, general public
- Type: delay, damage, reliability, accuracy, security
- Nature of discovery: internal, external complaint/inquiry

Class	Definition	Responsible Internal Parties	Possible Communications Actions
<b>Level 1: High</b>	Major exposure/impact. Requires significant operations, integrated communications response, change in systems and procedures.	Ameren Illinois, AMI Leadership Team, AMI Communications Team, AMI Deployment Team, Community and Public Relations, Government Affairs, Regulatory, Customer Service	Direct customer communications, proactive media, broad stakeholder outreach
<b>Level 2: Mid</b>	Serious exposure/impact. Requires immediate actions to contain or isolate the situation. Includes localized situations with wider consequences.	AMI Leadership Team, AMI Communications Team, AMI Deployment Team, Community and Public Relations, Government Affairs, Regulatory, Customer Service	Localized direct customer communications, proactive localized media and outreach
<b>Level 3: Low</b>	Isolated incident/anomaly with limited exposure/impact. Managed locally the situation will be contained.	AMI Leadership Team, AMI Communications Team, AMI Deployment Team	Respond to media inquiries, 1-on-1 customer and stakeholder outreach
<b>Level 4: Emerging</b>	Key data points, other information suggests an issue could arise.	AMI Communications Team	Development of standby messaging, strategies for potential response if the situation elevates

Critical Communications Classification Table

## 2016 Program Goals

### Implement Automated Home Area Network Registration

Ameren Illinois will implement automated Home Area Network functionality via the web in Q2 2016. In preparation for the next stage of HAN, we have developed standard operating procedures for our customer service and integrated operations center co-workers. Our organizational impact activities for training and internal communications are underway.

With the automated HAN process, devices will be automatically unregistered for meter move out requests. Ameren Illinois customers will be able enroll devices via web or their mobile device. Enabling self-service for the registration and unregistration of HAN devices gives customers the benefit of being able to immediately register their HAN device to their meter.

In Q1 2016, we implemented the manual device registration process. Ameren Illinois customers now have the ability to register their devices with eligible meters via the Ameren Illinois website (eCustomer). The device information is submitted to the Integrated Operations Center and the customer receives an email from Ameren Illinois with notification of the device enrollment process.

Information for customers ready to connect their device to an AMI meter via the web is located at [www.AmerenIllinois.com/WaysToSave](http://www.AmerenIllinois.com/WaysToSave). When the automated process for HAN is activated, this customer benefit option will be added to the AMI Customer Benefit mailer.

### Rollout New Data Analytics

Ameren Illinois has created an AMI Data Analytics Steering Committee to oversee further implementation of data analytics from AMI and AMR data. The table below shows the different analytics tests Ameren Illinois and its third party analytics software service will be exploring in 2016.

Test	Status	Phase	Business Metric	Automatic Processing	Timing
Proactive Gas Stuck Meters	In Progress	Validation/ DR Build	Faster ID of Dead Meters	Auto-issue meter investigation service orders for meters issues	Q1 2016
Dead on Arrival (DOA) Meter Tests	Completed	Validation/ DR Build	Faster ID of Dead Meters	Auto-issue meter investigation service orders for meters issues	Q1 2016
Reverse Rotation	In Progress	DR Build	Theft / Reduction of Field Expense	Auto-void unnecessary meter investigation service orders	Q1 2016
Slowing Gas Meters	In Progress	Validation/ Ameren BPD	Faster ID of Dead Meters	Auto Void CSS Stuck meter order -Auto-issue Slowing meter investigation service orders	Q2 2016
Irregular Use WFMS	In progress	Research	Misc. Benefit	Reduce manual review	Q2 2016
Meter Health – Bad Module	Identified	DR presenting options	Faster ID of Dead Meters	Auto-issue meter investigation service orders for dying modules	Q3 2016
Meter Health – CT / PT burn up	Identified	Research	Faster ID of Dead Meters	Auto-issue a WFM for review in CAD	Q3 2016
Order & WFM Review	Early Progress	Research	Value Identification	DataRaker assesses WFM and service order data to identify operational efficiency opportunities	Q4 2016
Alarms, Flags, Events Analytics	On Hold	Research	Misc. Benefit	Filter out “noisy” alarms to focus IOC resources on important alarms	Q4 2016

2016 Data Analytics Road Map

## **Initiate Peak Time Rewards Events**

After March 1, 2016, Ameren Illinois will gather the enrollment data from our Peak Time Rewards enrollment effort and study the effective amount of demand response Ameren Illinois can expect from the enrolled customers. Ameren Illinois will bid the demand response into the MISO capacity market in the April 2016 auction. Starting in June of 2016, when MISO or Ameren call a Peak Time Rewards event, customers will be notified and will receive a credit on their bill for reducing their usage during the event. Ameren Illinois will not only show the amount of the credit on the monthly bill, but will post the event history and estimated credit on the customer's MyAccount web portal.

## **Continue Tests of AMI Architecture for Cybersecurity**

The Cybersecurity Team will continue to conduct vulnerability scanning and reviews in cooperation with the AMI Technical Team. The reviews and routine processes are designed to continue to build on existing success and security of the AMI environment. Each time the application systems are modified or updated, AMI Cybersecurity conducts an exhaustive review to ensure the AMI Cyber Security Plan is being enforced. Additionally, with the implementation of the new McAfee Endpoint Security Suite within the Corporate Environment, the AMI Cybersecurity Team will be at the forefront of transitioning implementation within the AMI Environment.

## Build Customer Awareness of Self-Service Functionality

In 2016, we will continue our targeted and localized approach to customer communications and outreach.

Specifically, we will support and produce the following communications efforts:

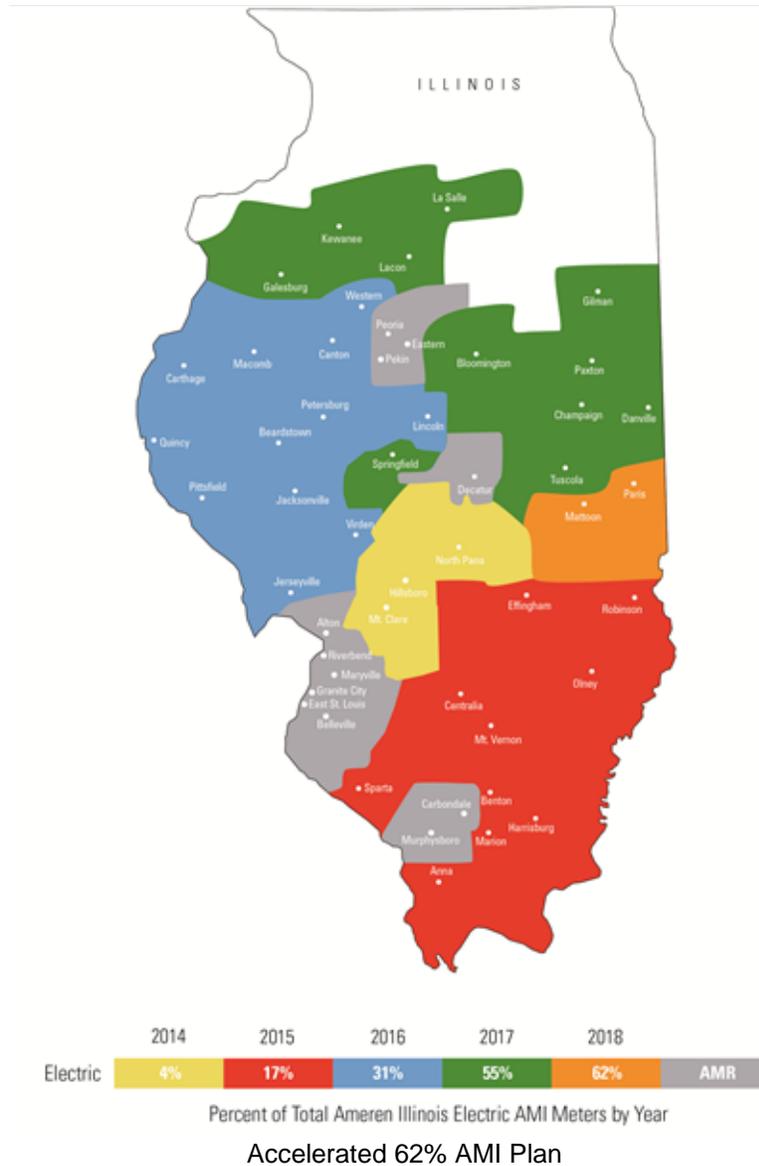
- **AMI Customer Benefits Mailer:** We will introduce the AMI Customer Benefits by using the newly designed direct mailer that drives customers to [www.AmerenIllinois.com/WaysToSave](http://www.AmerenIllinois.com/WaysToSave).



- **Media:** We will use localized media to pitch stories about the new features that their community can now use to better control energy usage and costs.
- **Social Media:** We will use Social Media to share the online PTR and Alerts in areas that have been cut over. Additionally, we will promote the online account features with customers across our service territory.
- **Tie-ins:** We will tie AMI Customer Benefits like the Energy-Saving plan to Earth Day activities and the Energy Star.gov “Take the Pledge” effort. Where appropriate, we will co-promote with our Energy Efficiency programs.
- **Bundling:** In an effort to increase clarity between the Power Smart Pricing and Peak Time Rewards programs, Elevate will start to bundle these programs as appropriate when marketing to AMI customers.
- **New Bill Messaging:** Ameren Illinois will have a new bill designed to provide customers with greater information regarding their energy usage and programs. Our goal is to use the new bill to deliver Peak Time Rewards bill credit messages to help with enrollment between the times of Oct. 1 – March 1 each year.
- **Direct Email and Direct Mail:** Ameren Illinois will continue to use these methods to promote all of the AMI Customer Benefits. This includes our 60-day and 30-day initial communications process along with our mailer that paces with route cutover; the AMI Customer Benefits mailer.

## Accelerate AMI 62% Deployment

Ameren Illinois will accelerate the deployment of the 62% electric AMI meters. The acceleration will allow customers to experience the benefits of AMI service enhancements, operational cost reductions, and associated “Manage My Energy” programs sooner than originally forecasted. With the acceleration, AMI will be deployed to 62% of AMI customers by early 2018.



Year	Approved Plan	Accelerated Plan
2014	40,419	46,972*
2015	148,000	161,567*
2016	148,000	178,000
2017	148,000	295,000
2018	148,000	<u>98,880</u>
2019	<u>148,000</u>	
Total	780,419	780,419

**\*Actual Deployed Electric Meters**

Ameren Illinois exceeded the 2014 and 2015 meter targets due to an increase in available work days for weather days not used, not due to planned acceleration. Ameren Illinois incorporates weather days into its deployment schedule to ensure there is enough schedule contingency to meet deployment commitments outlined in the ICC approved AMI Plan.

## Electric Capital Expenditures As Filed (\$ millions)

As Filed in Docket 12-0244	2012	2013	2014	2015	2016	2017	2018	2019	Total
AMI Meters	-	\$1.0	\$6.4	\$20.7	\$21.0	\$21.2	\$21.5	\$21.8	\$113.6
AMI Comms Network	-	\$0.7	\$2.7	\$4.8	\$4.9	\$4.9	\$5.0	\$5.0	\$28.0
Hardware	-	\$1.9	-	\$0.1	\$0.1	\$0.2	\$0.2	\$2.7	\$5.2
Systems Integration	-	\$34.6	\$30.6	\$29.9	\$4.0	-	-	-	\$99.1
Program Management	-	\$5.2	\$4.2	\$3.1	\$0.8	\$0.8	\$0.8	\$0.8	\$15.7
<b>Total</b>	-	<b>\$43.4</b>	<b>\$43.9</b>	<b>\$58.6</b>	<b>\$30.8</b>	<b>\$27.1</b>	<b>\$27.5</b>	<b>\$30.3</b>	<b>\$261.6</b>

## Accelerated Electric Capital Expenditures Plan (\$ millions)

Accelerated Capital Plan	2012	2013	2014	2015	2016	2017	2018	2019	Total
AMI Meters	-	\$0.2	\$9.1	\$28.7	\$25.1	\$49.9	\$12.7	-	\$125.8
AMI Comms Network	-	\$0.8	\$5.4	\$4.7	\$10.1	\$1.9	\$0.6	-	\$23.5
Hardware	-	\$1.7	\$0.2	\$0.2	\$0.1	\$0.0	-	-	\$2.2
Systems Integration	-	\$12.1	\$15.7	\$10.7	\$0.7	\$0.1	-	-	\$39.2
Program Management	\$2.9	\$3.1	\$2.5	\$1.9	\$1.4	\$1.1	\$0.3	-	\$13.2
<b>Total</b>	<b>\$2.9</b>	<b>\$18.0</b>	<b>\$32.9</b>	<b>\$46.1</b>	<b>\$37.4</b>	<b>\$53.0</b>	<b>\$13.6</b>	<b>-</b>	<b>\$203.9</b>

Due to the acceleration of the 62% AMI deployment, the current forecast for 2016 and 2017 exceeds the Electric Capital Expenditures As Filed in Docket 12-0244.

## EIMA Metrics

As outlined in the MAP-M metric plan, following are the results for the 2015 year-end AMI related EIMA metrics:

1. Estimated bills: 386,095
2. Consumption on inactive meters: 10,481,629 kwh
3. Uncollectibles: 12,275,959

Ameren Illinois satisfied the 2015 performance year goals for all three metrics. These metrics will be explained in more detail in Ameren Illinois' Modernization Action Plan Multi-Year Performance Metrics 2016 Annual Report to be filed pursuant to 220 ILCS 5/16-108.5(f).

## AMI Tracking Mechanisms

In its approved AMI Plan, Ameren Illinois proposed to track the following information. All information is as of December 31, 2015.

1. Percent of support system installed

**100% of the AMI support systems and applications were installed**

2. Percent of 2-way network installed

**47.5% of the two way network was installed**

3. Number and percent of AMI meters installed

**208,539 meters installed, 35.5% of planned meter installations**

4. Number of customers able to access the Web Portal and Web Portal usage statistics

**1.167M residential customers are able to access the web portal**

**2560 AMI, AMR, and Legacy customers accessed the web portal in 2015**

5. Number of customers eligible for peak time rebate tariff

**91,527**

6. Number of customers signed up for peak time rebate tariff

**10,455**

7. Number of customers on PSP, RTP, or other real time rates

**Number of customers on Ameren Illinois' Power Smart Pricing (PSP) Program = 11,265**

**Number of customers on an Ameren Illinois' Real Time Pricing (RTP) Program = 1,420**

In addition to the above tracking mechanisms, Ameren Illinois has voluntarily agreed to track additional items. As stated, the work and activities described below are a voluntary undertaking on the part of Ameren Illinois. Recognizing changing circumstances that may affect the propriety of tracking the subject information, or where

provisions of the enabling statutes are no longer operative, Ameren Illinois reserves the right to modify, delete, or add to any of the provisions described below, and the right to terminate any or all of the undertakings.

All data is as of December 31, 2015 unless otherwise stated.

1. The number of residential and small commercial customers taking service from Ameren Illinois sponsored time variant or dynamic pricing tariffs, segmented by residential and small commercial customers, and by the specific dynamic or time variant rate. A residential customer is defined as a customer taking service under DS1. A small commercial customer is defined as a DS2 customer with usage of 15,000 kWh or less annually for the prior calendar year.

Type of Tariff	# of Accounts
Residential – Power Smart Pricing	11,265
Residential – Ameren Illinois RTP1	974
Small Commercial - RTP	312
<b>Total Residential and Small Commercial RTP Accts</b>	<b>12,551</b>
Other Non-residential RTP	134
<b>Total Hourly Price Accts</b>	<b>12,685</b>

2. The estimated peak demand reduction in MW resulting from customer participation in Ameren Illinois' Peak Time Rebate Program. Estimated peak demand reduction is defined as the average estimated load reduction during the previous calendar year's Peak Time Rebate curtailment events.

**The estimated peak demand reduction in MW resulting from customer participation in Ameren Illinois' Peak Time Rebate Program is not expected to be available until the 2017 annual report.**

**Ameren Illinois registered with MISO for 2.1MW at the customer meter level (2.3MW adjusting for line losses). Actual performance will be noted in the 2017 report, to the extent an event is called.**

3. The following by customer class (DS1, DS2-Small Commercial, DS2-All Other, DS3, DS4):
  - a. Number of AMI meters installed: 208,539

Customer Class	Meters
DS1	182,074
DS2 – Other	8,970
DS2 – Small Commercial	17,357
DS3	43
DS4	3
DS5	14
Other (Test Meters)	77
No Active Customer	1
<b>Total</b>	<b>208,539</b>

- b. Number of AMI meters communicating through the AMI network and network accessed data used for billing.

Customer Class	Meters
DS1	63,524
DS2 – Other	2,806
DS2 – Small Commercial	6,412
DS3	14
DS4	1
DS5	7
No Active Customer	2
<b>Total</b>	<b>72,766</b>

- c. Number of customers with AMI meters whose data is available on the applicable web-based portal.

**63,524 AMI customers' hourly interval data was available on the web portal in 2015**

- d. Number of customers with AMI meters who have viewed their data on the applicable web-based portal a minimum of one time during the calendar year.

**21 AMI customers accessed their hourly interval data on the web portal in 2015**

4. The number of AMI metered customers with a consumer device registered to receive information from the AMI meter. Ameren Illinois will also provide a list, by device type, of the consumer devices that have been certified as capable of receiving information from its AMI meters.

**Verification of consumer devices began in 2015. The registration process was implemented in January 2016. There are no customer registrants at this time.**

5. As applicable, the number of AMI metered customers who download data through the Green Button Initiative format a minimum of one time during the calendar year.

**15 AMI customers downloaded their Green Button data in 2015**

6. The number of AMI meters that are replaced prior to the end of their manufacturer expected 20-year useful life. The high level cause of the meter replacement will also be tracked in one of four categories – 1. Communication related, 2. Metrology related, 3. Remote switch related, 4. External physical damage not caused by the meter. Ameren Illinois will also note those internal meter malfunctions (categories 1 – 3 above) that cause a non-momentary disruption of service to the customer.

Failure Type	2014	2015	Total
1. Communication	1	162	163
2. Metrology	6	59	65
3. Remote Disconnect	0	4	4
4. Damaged Meter	0	47	47
<b>Total</b>	<b>7</b>	<b>272</b>	<b>279</b>

- Ameren Illinois will add the most current Part 466.140 Distributed Generation Annual Report as an attachment to its annual AMI Plan Update.

**See Appendix 1.**

- Ameren Illinois will segment from the most current Part 466.140 Distributed Generation Annual Report those customers taking service on the Net Metering Tariff and add this document as an attachment to its annual AMI Plan Update.

**See Appendix 2.**

- The total known distributed generation capacity in KW connected to the Ameren Illinois distribution system based on the Part 466.140 Distributed Generation Report and divide that capacity value by the total Ameren Illinois system peak demand.

**The total known distributed generation capacity in KW connected to the Ameren Illinois distribution system is 15.5949 KW, or 0.71% of Ameren Illinois' peak demand during 2015 of 2186.53 MW**

- The time required to connect distributed resources to the grid. The clock will start upon receipt of a complete application from the customer. An application is considered complete when all required documentation, information, application fees, etc. have been received and application can be forwarded to engineering. The clock will end when an appropriate Ameren Illinois electric meter is installed and / or appropriately programmed to accommodate the distributed resource.

**See Appendix 3.**

- The number of formal ICC complaints, informal ICC complaints and other complaints related to AMI deployment, broken down by type of complaint and resolution.

**From January 2015 through December 2015, there were 40 related to AMI deployment.**

	Complaint	Resolution
1	Customer informed Apex that tech stepped over a broken section of the fence.	Customer requested no follow up. Issue was discussed with installation team.
2	Customer accused installer of jumping the fence to access the meter.	Discussed concerns with customer and talked to installer who indicated he was able to reach over the fence and unlatch the fence and did not jump the fence.
3	Customer states company changed out meter and damaged TV	CCMI has denied the claim. There were no problems concerning the meter change.
4	Customer called angry because we are not jumping the meters to prevent power loss.	Apex is not able to jump meters and explained this to the customer.
5	Apex vehicle became stuck in the field by the customer's home. The vehicle left ruts in the field.	A repair person visited to level out the field.
6	ICC Informal - Customer wants current meter left in place.	Customer may maintain electro-mechanical meter until 1) it fails 2) meter is randomly selected and required for testing or 3) company programmatically retires that meter type.
7	Customer complaint that AMI meter installation caused heat pump damage. Also increased bill due to excess usage.	Customer meter base has a bypass handle that allows power to remain on when meter is removed. Claim was denied.

8	Customer thinks meter installation caused power surge and damaged his computer.	Upon claim investigation, customer equipment working.
9	Customer states new meter is blocking her from opening the back screen door.	The operating center installed a low profile cover to resolve the issue.
10	Customer claimed that the installer took his surge protector	From the photographs taken during the installation, no surge protector was present when the installer started. Apex communicated this to the customer. The complaint has been escalated to Ameren (Dennis Spencer)
11	Customer claims TV is not working due to AMI installation.	Customer let Apex know the issue worked itself out, TV now working, meter installed correctly.
12	Customer upset about AMI installation - requests suspension to get more information regarding health, privacy, and costs.	Explained AMI deployment and charges for non-standard metering.
13	Customer rec'd AMI meters - wants old meters but does not want to pay NSM fees.	Explained AMI deployment and charges for non-standard metering.
14	Customer questioned the tech that was installing the new meters at the house the customer advised him that she did not want the new meter. Customer stated the tech threatened to call the sheriff and advised that there might be additional fees if she kept the old meter.	The installer has shared with us that he did not threaten the customer. Customer was informed that she could refuse the meter and that there was a fee that Ameren would go over with her
15	Customer complaint regarding missed appointment.	Customer was called to reschedule appointment made during blackout. Ameren performed the exchange.
16	Customer called in to report that garage doors will not open after AMI installation.	Talked with customer, issue related to breaker trip.
17	Customer claimed no power after installation.	Customer had power when Apex arrived to check on the problem.
18	Customer has delicate medical equipment and wants Ameren to waive NSM charges.	A Non-Standard Metering confirmation letter was sent to Mrs. Hood confirming her preference to be enrolled in the program. Currently Mrs. Hood lives in Alton which is not part of the 62% electric meter deployment at this time.
19	Customer changed his mind after requesting NSM. Customer told Ameren Rep he was upset with the AMI installer's lack of courtesy.	Left messages for customer at primary and secondary numbers with no response or ability to leave voicemail.
20	Customer says he did not hear anyone knock on the door; claims the installer let his dog out and the dog is now loose.	Confirmed the installer did attempt to notify the customer of the install by leaving a door hanger. Apex did send the installer back to help locate the dog and secure it, which did occur to the satisfaction of the customer.
21	Customer reported no power after AMI installation.	Issue resolved by resetting customer main.
22	Customer is upset she did not receive notification of the AMI install.	Apex verified the installer knocked and left a door hanger. Call was transferred to the Ameren call center to discuss the letter and postcard notification.
23	Customer requested non-standard metering and wants old analog meter.	Old analog meters are obsolete and not an option for deployment.

24	Customer states parents do not want AMI because they have pacemaker. Customer is also concerned about safety and does not want to pay NSM fees.	Explained that AMI signal is weaker than most common wireless devices. Ameren will remove one time \$70 charge if customer goes on NSM and pays monthly charge.
25	Customer concerned with AMI communications methods - he does not feel sending out a letter, postcard or knocking on the door at the time of install is adequate. He thinks that an install should not occur without a verbal discussion face to face with the home owner.	Customer did not receive initial AMI brochure – Ameren customer service manually sent another brochure.
26	Customer complaint regarding missed appointment.	The appointment was rescheduled.
27	Customer disputes AMI meter replacement and charges for refusal.	Joseph Musial filed the complaint and requested no AMI meter. The installation was authorized by Jana Musial who is the customer of record – refusal must requested by customer of record.
28	Customer complaint regarding paint on the home	Paint was removed successfully the week of 9/7/15.
29	Customer wanted to refuse the meter however she missed doing so before meter was exchanged.	We have not made contact with the customer since providing NSM information – account has been finalized and has an AMI meter.
30	Customer complaint regarding exposed wires. Customer asked for someone to go back and fix it.	The customer misunderstood the work performed by Apex while on site. This was explained and the issue resolved.
31	Customer complaint regarding missed appointment.	Apex was late 56 minutes to the customer appt. Scheduled 1-2pm order completed at 2:56 PM.
32	Customer was not aware of the upgrade, thought the full meter was replaced and wanted his old meter read.	Talked with the customer and that his meter and index was original. Customer stated all was good now that he understood our work.
33	Customer complaint regarding missed appointment.	Gas appointment made in error for the customer. Customer actually needed electrical repair; Ameren made arrangements for the meter repair.
34	Customer complaint regarding missed appointment.	Customer appointment was rescheduled.
35	Customer concern regarding AMI safety issues seen on TV and in newspapers.	Rep sent customer information on AMI and advised him to review Ameren website regarding safety concerns.
36	Customer does not want AMI meters; states meters emits radiation.	Explained that AMI meters are not scheduled to be deployed in customer's area and explained amount of RF emitted.
37	Customer complained that the tech scared the daughter when he knocked on the door and rattled the handle.	We have not made contact with the customer despite several call attempts. We believe she heard the tech leaving a door hanger, not turning the handle.
38	Installer worked on neighbor's meters, however did not work on his meter, and left a tire mark on the driveway.	Talked with customer and discussed the complaint - set up a time to go and work their order when we have stock and it is not in blackout.
39	Customer says he/she has gotten very ill since the AMI installation and wants the meter removed. Customer disputes removal and monthly charges.	Explained AMI meter installation - Explained NSM charges and we are unable to waive.

40	Customer complained that the tech was trespassing.	The issue was resolved by the Ameren team. Customer will be called prior to the visit, customer is aware of the exchange process.
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**There were no formal ICC complaints filed as a result of the AMI deployment.**

12. The reduction in gasoline consumption from the reduction in manual meter reading miles, and converted to a reduction in greenhouse gas emissions based on formulas provided by CUB / ELPC / EDF.

**The reduction in gasoline consumption for Ameren Illinois manual meter reading truck miles is 8,547 gallons. The reduction in gasoline consumption converted to a reduction in greenhouse gas emissions is 167,000 lbs of CO2.**

13. The annual combined load factor for all its AMI metered customers, and its entire system annual load factor. Annual load factor is defined as total consumption in MWH divided by the hourly peak demand at the time of system peak in MW multiplied by 8760 hours per year.

**The Ameren Illinois overall system annual load factor is 61.24%. For AMI metered customers in 2015 that had a full year's worth of AMI data (approximately 25,000 service points), the load factor is 39%. Please note the vast majority of these customers fall into the low summer/low winter usage load factor category. The overall load factor for the low summer/low winter usage load factor category is 39%.**

14. The number and percentage of 12 kV distribution circuits using data from AMI meters as part of a voltage / var control scheme.

**There are no 12 kV distribution circuits using data from AMI meters as part of a voltage/var control scheme.**

Ameren Illinois has not agreed to any additional tracking mechanisms at this time, but will continue to consider additional tracking mechanisms as appropriate in the future.

# Appendix 1 – Part 466.140 Distributed Generation Annual Report

2016  
Annual Report of  
Ameren Illinois Company d/b/a Ameren Illinois  
Pursuant to Part 466.140  
of the 83 Illinois Administrative Code  
≤10 MVA Distributed Generation Annual Report  
Requests for Distributed Generation Interconnection

	2013-2014 Data (as of 2-10-14)		2014-2015 Data (as of 2-10-15)		2015-2016 Data (as of 2-10-16)		<b>Totals as of 2-10-16</b>	
	Completed	Under Review	Completed	Under Review	Completed	Under Review	Requests Received*	
1) Requests Received	36	11	33	14	84	9	634	
Level 1	25	9	18	10	69	2	505	
Level 2	11	1	15	4	15	6	122	
Level 3	0	0	0	0	0	0	1	
Level 4	0	1	0	0	0	1	6	
							Requests Approved*	
2) Requests Approved	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>
	46	423.9	53	1086.3	99	1647.5	552	15594.9
Level 1:	35	155.7	32	175.0	80	334.5	443	2181.4
Solar	28	135.0	30	161.7	79	332.7	353	1634.6
Wind	7	20.7	0	0.0	1	1.8	50	246.0
Both	0	0.0	2	13.4	0	0.0	40	300.8
Level 2:	11	268.2	21	911.3	19	1313.0	108	8613.5
Solar	11	268.2	19	857.2	17	1262.8	82	3715.2
Wind	0	0.0	0	0.0	0	0.0	17	4629.3
Both	0	0.0	2	54.1	2	50.1	9	268.9
Level 3:	0	0.0	0	0.0	0	0.0	0	0.0
Level 4:	0	0.0	0	0.0	0	0.0	1	4800.0
							Requests Denied*	
3) Requests Denied	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>			<u>Customers</u>	<u>kW</u>
	0	0.0	0	0.0			0	0.0

Note:

Level 1 = Distributed generation facilities less than or equal to 10kVA

Level 2 = Lab certified interconnection equipment with nameplate capacity less than or equal to 2MVA.

Level 3 = Distributed generation facility does not export power. Nameplate capacity is less than or equal to 50kVA if connected to area network or less than or equal to 10 MVA if connected to a radial distribution feeder.

Level 4 = Nameplate capacity rating is less than or equal to 10 MVA and the distribution generating facility does not qualify for a

Level 1, 2 or 3 review, or the distribution generating facility has been reviewed but not approved under a Level 1, 2 or 3 review.

\* - Total column reflects totals from the inception - April 1, 2008 to current.

## Appendix 2 – Part 466.140 Distributed Generation Annual Report – Net Metering Only

**2016**  
**Annual Report of**  
**Ameren Illinois Company d/b/a Ameren Illinois**  
**Pursuant to Part 466.140**  
**of the 83 Illinois Administrative Code**  
**<=10 MVA Distributed Generation Annual Report**  
**Requests for Distributed Generation Interconnection (Net Metering Customers Only)**

	2012-2013 Data (as of 2-10-13)		2013-2014 Data (as of 2-10-14)		2014-2015 Data (as of 2-10-15)		2015-2016 Data (as of 2-10-16)		<b>Totals as of 2-10-16</b>	
	<u>Completed</u>	<u>Under Review</u>	<u>Requests Received*</u>							
1) Requests Received	97	21	25	10	31	14	76	7	281	
Level 1	73	15	20	9	18	10	64	2	211	
Level 2	24	6	5	1	13	4	12	5	70	
Level 3	0	0	0	0	0	0	0	0	0	
Level 4	0	0	0	0	0	0	0	0	0	
									<u>Requests Approved*</u>	
2) Requests Approved	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>
	85	749.7	35	270.0	49	620.9	88	640.5	257	2281.0
Level 1:										
Solar	66	366.8	30	146.1	31	170.0	72	329.0	127	1011.9
Wind	58	309.0	25	130.2	30	161.7	71	327.2	184	928.1
Both	5	36.8	5	15.9	0	0.0	1	1.8	11	54.5
Level 2:										
Solar	3	21.0	0	0.0	1	8.4	0	0.0	4	29.3
Wind	19	383.0	5	123.9	18	450.9	16	311.5	42	1269.2
Both	15	272.5	5	123.9	16	396.8	14	261.3	50	1054.5
Level 3:										
Solar	3	72.3	0	0.0	0	0.0	0	0.0	3	72.3
Wind	1	38.2	0	0.0	2	54.1	2	50.1	5	142.4
Both										
Level 4:										
Solar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Wind	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Both										
3) Requests Denied	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>	<u>Customers</u>	<u>kW</u>
	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Note:

Level 1 = Distributed generation facilities less than or equal to 10kVA

Level 2 = Lab certified interconnection equipment with nameplate capacity less than or equal to 2MVA.

Level 3 = Distributed generation facility does not export power. Nameplate capacity is less than or equal to 50kVA if connected to area network or less than or equal to 10 MVA if connected to a radial distribution feeder.

Level 4 = Nameplate capacity rating is less than or equal to 10 MVA and the distribution generating facility does not qualify for a

Level 1, 2 or 3 review, or the distribution generating facility has been reviewed but not approved under a Level 1, 2 or 3 review.

\* - Total column reflects totals from the inception - Feb 10, 2012 to current.

# Appendix 3 – Time Required for Connection of Distributed Resources

2016  
 Annual Report of  
 Ameren Illinois Company d/b/a Ameren Illinois  
 Pursuant to Part 466.140  
 of the 83 Illinois Administrative Code  
 <=10 MVA Distributed Generation Annual Report  
 Requests for Distributed Generation Interconnection (Net Metering Customers Only)\*\*\*

<u>Customer #</u>	<u>Duration: Time from a Completed Application Until Energy Flows from Project to Grid (Live Date) in Actual Days</u>
1	26
2	80
3	12
4	62
5	93
6	29
7	24
8	70
9	45
10	16
11	6
12	14
13	67
14	299
15	120
16	78
17	22
18	38
19	55
20	58
21	38
22	51
23	20
24	40
25	34
26	100
27	92
28	76
29	33
30	65
31	263
32	7
33	76
34	96
35	64
36	16
37	16
38	15
39	73
40	56
41	11
42	50
43	7
44	6

**Assumptions:**

1. The clock will start upon receipt of a complete application from customer. An application is considered complete when all required documentation, information, application fees, etc. has been received and application can be forwarded to engineering. (instructions - use Column Q in spreadsheet)
  2. The clock will end based on the date when the bi-directional (dual channel) meter is installed or re-programmed. The customer is not authorized to operate the system until the application has been reviewed and approved by Engineering, an inspection and site-test completed and a bi-directional (dual channel) meter installed. (Instructions - use column AC in spreadsheet)
  3. Ameren Illinois Policy is to install a bi-directional (dual channel) meter for every distributed generation installation.
  4. It should be noted some systems will NOT have energy flow into the grid. These systems were designed for load sharing to reduce billable energy consumption (e.g. some smaller systems were installed in school science labs for educational purposes only.)
  5. Time is represented in actual days, not business days.
- \*\*\* - This represents the total # of net metering customers that completed their installations from Feb 10, 2015 to Feb 10, 2016.

# Appendix 3 – Time Required for Connection of Distributed Resources

2016  
 Annual Report of  
 Ameren Illinois Company d/b/a Ameren Illinois  
 Pursuant to Part 466.140  
 of the 83 Illinois Administrative Code  
 <=10 MVA Distributed Generation Annual Report  
 Requests for Distributed Generation Interconnection (Net Metering Customers Only)\*\*\*

<u>Customer #</u>	<u>Duration: Time from a Completed Application Until Energy Flows from Project to Grid (Live Date) in Actual Days</u>
45	14
46	62
47	19
48	54
49	243
50	243
51	243
52	243
53	243
54	243
55	243
56	243
57	243
58	243
59	243
60	243
61	243
62	243
63	243
64	243
65	243
66	243
67	243
68	243
69	243
70	243
71	17
72	33
73	41
74	33
75	45
76	42
77	86
78	58
79	14
80	11
81	78
82	91
83	167
84	4
85	7
86	69
87	102
88	19

**Assumptions:**

1. The clock will start upon receipt of a complete application from customer. An application is considered complete when all required documentation, information, application fees, etc. has been received and application can be forwarded to engineering. (instructions - use Column Q in spreadsheet)
  2. The clock will end based on the date when the bi-directional (dual channel) meter is installed or re-programmed. The customer is not authorized to operate the system until the application has been reviewed and approved by Engineering, an inspection and site-test completed and a bi-directional (dual channel) meter installed. (Instructions - use column AC in spreadsheet)
  3. Ameren Illinois Policy is to install a bi-directional (dual channel) meter for every distributed generation installation.
  4. It should be noted some systems will NOT have energy flow into the grid. These systems were designed for load sharing to reduce billable energy consumption (e.g. some smaller systems were installed in school science labs for educational purposes only.)
  5. Time is represented in actual days, not business days.
- \*\*\* - This represents the total # of net metering customers that completed their installations from Feb 10, 2015 to Feb 10, 2016.

## Appendix 4 – Non-Standard Metering Biannual Report

Each year beginning in 2015, on or before April 1 and on or before October 1, Ameren Illinois shall file with the ICC a semi-annual report that summarizes information pertaining to Customers that have refused AMI metering. The semi-annual report shall provide (1) the number of Customers that have refused AMI metering and the reason for the refusal; (2) a description of the Company's efforts to address such Customers; and (3) identification of the Company's costs associated with providing service to such Customers. The report due by April 1 shall be included in the Advanced Metering Infrastructure (AMI) annual report filed by the Company that requires the Company to file a report by April 1 of each year "regarding the progress it has made toward completing implementation of its AMI Plan", pursuant to Section 16-108.6(e) of the Public Utilities Act.

Within 30 days after the Company files the fourth semi-annual report described above, the Company shall file a petition with the ICC requesting authority to continue the use of this Rider and applicable charges. The petition will include the information provided in the previously submitted semi-annual reports.

### Summary

For the period of June 2014 through December 2015, 197 AMR and AMI customers requested non-standard metering. Due to the prior AMR medical exemption process, 6 customers have been grandfathered into non-standard metering. These customers are not included in the 197 and do not receive the monthly advanced meter refusal charge. There were 12 Ameren Illinois customers enrolled in non-standard metering as a result of Unable-to-Complete AMI meter deployments.

### Ameren Illinois Non-Standard Metering Refusals

Refusal Reason	Number of Customers
Does not want Gas AMI	1
Health	39
Higher Bills	4
No reason provided	128
Privacy	8
Safety	5
Unable to Complete Advanced Meter Install	12
<b>Total</b>	<b>197</b>

## There are two ways for customers to enroll in Non-Standard Metering:

### 1. Customer Request for Non-Standard Metering

Residential Customers have the option of refusing the installation of Advanced Metering or requesting the removal of previously installed Advanced Metering by contacting the Ameren Illinois Contact Center.

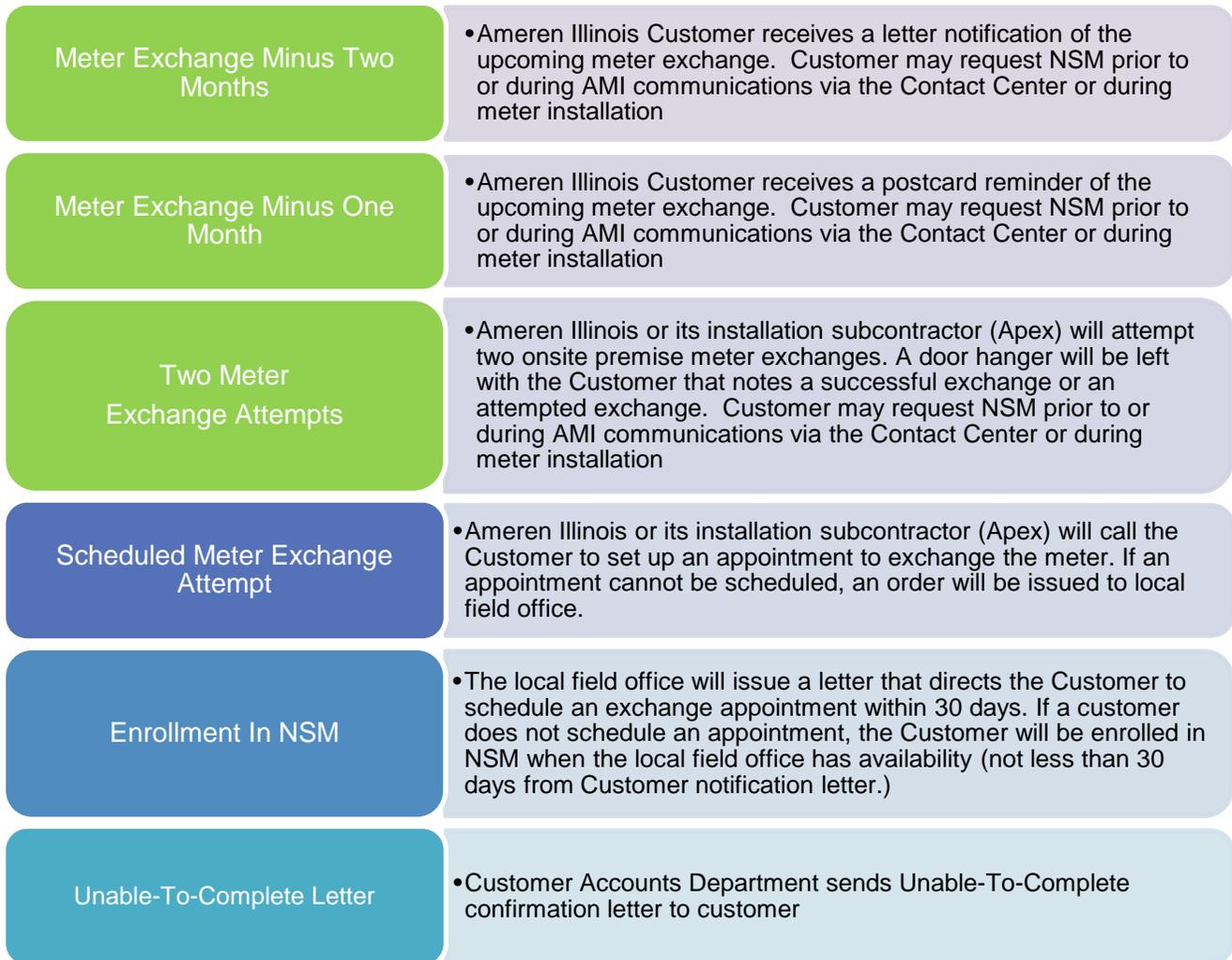
The enrollment process is as follows:



## 2. Customer is enrolled due to Unable-To-Complete Meter installations

As stated in the Non-Standard Metering Rider, if Ameren Illinois is unable to complete an Advanced Metering installation at eligible premises for reasons including but not limited to, locked gates or doors, physical blockages of meters, or unrestrained dogs, Ameren Illinois will treat these situations as Advanced Metering refusal. Ameren Illinois will contact the customer 6 times prior to enrolling them in non-standard metering.

The contact process is as follows:



## Ameren Illinois Customers with 2015 NSM Charges

There were 104 Ameren Illinois customers who received monthly charges as a result of Non-Standard Metering through December 2015. The NSM rider includes all automated metering, both AMI and AMR customers. There are 9 AMR AND 95 AMI customers with NSM charges.

Service(s)	Number of Customers
Electric & Gas	21
Gas	8
Electric	76
<b>Total</b>	<b>104</b>

## Customer Refusal Method

Department	Cost
Enrolled after Meter Installation	3
AMI Refusal During Deployment	76
Customer Contact Center	106
Unable to Complete	12
<b>Total</b>	<b>197</b>

## Ameren Illinois' Costs Summary

Department	Cost
Meter Reading	11,608
Field and Meter Services	210
Deployment	2,015
AMI Operations	1,241
Customer Experience	2,554
Billing	2,687
<b>Total</b>	<b>\$20,315</b>

## Ameren Illinois' Estimated Costs Descriptions

**Meter Reading:** Ameren Illinois incurred an estimated \$11,608 of meter reading costs for 104 customers who received NSM charges through 2015.

Manual Meter Reading costs:

Service(s)	#Reads	Calculation
Electric	319	#Reads * monthly fee = 7,216
Gas	16	#Reads * monthly fee = 363
Both	304	#Reads * monthly fee = 4,028
<b>Total</b>	<b>639</b>	<b>\$11,608</b>

**Field and Meter Services:** Ameren Illinois incurred an estimated \$210 of Field and Meter Services cost for customers' meter exchanges.

Meter Exchange order costs:

#Customers	Calculation
3	#Customers * Exchange Fee 3 * \$70 = \$210
<b>Total</b>	<b>\$210</b>

**Deployment:** Ameren Illinois incurred an estimated \$2,015 of Deployment costs for 76 customers who refused AMI during deployment and 12 Unable to Complete installs:

Subcontractor Installer Costs:

#Subcontractor Rate	Calculation
\$22.90	Rate * #Customers \$22.90 * 88 = \$2,015
<b>Total</b>	<b>\$2,015</b>

**AMI Operations:** Ameren Illinois incurred an estimated \$1,241 of Operations costs for 12 Unable to Complete installs and 79 customers who requested NSM during meter installation or after meter installation (exchange):

Operations Support Costs:

OSR Rate	Time to Support	Cost to Support	Calculation
\$81.86	10 minutes/Customer	\$13.64/Customer	Cost to Support * #Customers \$13.64 * 91 = \$1,241
<b>Total</b>			<b>\$1,241</b>

**Customer Experience:**

- Ameren Illinois incurred an estimated \$1,446 of costs for 106 customers who contacted the Ameren Illinois Customer Contact Center to request NSM.
- Ameren Illinois incurred postage and labor costs of \$108 for all 197 customers who requested NSM.

Rate		Cost to Support	Calculation
Contact Center \$81.86/hr	10 Minutes/Customer	\$13.64/Customer	Cost to Support * #Customers \$13.64 * 106 = \$1446
Postage \$0.55/letter	1 Letter/Customer	\$0.55/Customer	Cost to Support * #Letters \$0.55/letter * 197 = \$108
Total			<b>\$1,554</b>

**Billing:** Ameren Illinois incurred an estimated \$2,687 of cost for all 197 customers who requested Non-Standard metering through December 2015.

Customer Accounts department (CAD) Costs:

CAD Rate	Time to Support	Cost to Support	Calculation
\$81.86	10 minutes/Customer	\$13.64/Customer	Cost to Support * #Customers \$13.64 * 197 = \$2,687
Total			<b>\$2,687</b>