

AMEREN ILLINOIS COMPANY
AMI CONNECTED SMART DEVICES PROGRAM
PURSUANT TO ICC DOCKET NO. 13-0498
ORDER ON REOPENING

MAY 21, 2015

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I. DOCKET BACKGROUND

In compliance with the Orders issued in ICC Docket No. 13-0498, Ameren Illinois Company d/b/a Ameren Illinois ("Ameren Illinois," "AIC" or the "Company") hereby submits to the Illinois Commerce Commission ("Commission") an AMI Connected Smart Devices Program, which replaces the previous Consumer Smart Devices Plan and will enable smart devices to communicate with Advanced Meter Infrastructure ("AMI") meters for the purpose of providing consumers with tools for controlling and reducing energy consumption ("Program").¹ As set forth below, AIC's Program complies with the Order on Reopening, Docket 13-0498, April 22, 2015 (Order on Reopening) by including a Smart Devices Program that provides for the testing, validation and enabling of commercially viable smart devices that comply with the ZigBee Smart Energy communication standard in connection with AMI deployment.

This Program and related budgeted funds are the direct result the Commission's directives issued in Docket No. 13-0498, specifically in the Commission's Final Order, Amending Order and Final Order on Reopening. As stated in the Final Order on Reopening:

The Commission is dedicated to providing consumers with all available tools to take control of their energy use, maximize savings and encourage conservation. This approach includes leveraging the investments of smart grid that are well underway. In PY9 alone, AIC will be deploying roughly 400,000 smart meters in its territory. At the same time, private market innovation with home devices is moving at a rapid pace. Customers are adopting new technologies that provide interoperability between devices so they can have greater control over their energy needs.

Many of these devices may be unable to communicate with AIC's smart meters. It appears that this lack of interoperability is not due to technological constraints; rather, the roadblock appears to be a lack of standards and coordination among AIC and manufacturers. Furthermore, customers would have no way of knowing what devices can and cannot communicate with their smart meter.

AIC's smart meters could provide effective tools for greater energy reduction and management if they are paired correctly with smart home devices. The Commission believes that ELPC's smart devices program could provide a mechanism to unlock additional savings previously

¹ The Program is based on current information and is subject to modification or change if assumptions and estimates require adjustments.

unattainable if interoperability standards are developed and consumers can make choices knowing which devices are compatible with their meters and which are not.

The Commission is reluctant to order AIC to spend the entire emerging technologies budget on this initiative, thereby replacing the codes and standards initiative of which AIC is a partner with others. ([1/28/2014 Final] Order at 78-79)

Therefore, the Commission adopts CUB's proposal to spend the remaining portion of the electric and gas emerging technologies budget on the proposed smart devices program. At a minimum, AIC must develop a comprehensive plan for smart devices including potential programs that deploy home devices in conjunction with smart meters. In addition, AIC must discuss its plan with the SAG and report back to the Commission within 6 months.

Ameren is directed to use the remaining emerging technologies budget to create an ongoing E&V program for the testing and certification of smart devices, as agreed to by the parties. After the earmarked dollars are spent and the E&V program is established and running, Ameren may move the cost recovery of such a program to it[s] AMI Plan, pursuant to 16-108.5, to ensure its continued operation. (Amendatory Order at 2).

(Docket No. 13-0498, 04/22/2015 Final Order on Reopening at 41; 44 (emphasis added)).

The Final Order on Reopening thus provided the following directives regarding the Program:

- a) Submit a compliance filing within 30 days of the Final Order on Reopening replacing the previously filed Consumer Smart Devices Plan with a Program that complies with the directives set forth by the Commission;
- b) Reflect a budget for the use of gas and electric energy efficiency funds from the Emerging Technologies Budget included in AIC's Plan 3 and later transition cost-recovery to the AMI Plan to ensure continued viability of the Program;
- c) Develop a customer-centered service for enabling and validating commercially viable smart devices to create a process for the testing, evaluating, enabling and verification of commercially viable smart devices that comply with ZigBee Smart Energy communication standard;

- d) Provide information to customers about the availability of compatible devices via the AIC website and residential customer portal once appropriate registration processes and systems are in place;
- e) Monitor development of new devices for inclusion in the Program, both related to Ameren Illinois' energy efficiency programs and deployment of AMI;
- f) Within 90 days, initiate the Program; and
- g) Limit evaluation of the Program to metrics that inform AIC and all stakeholders of how the processes for customer education, device certification and device activation are evolving, but capture data that would include:
 - 1) Number and type of smart devices certified as compatible with AIC smart meters;
 - 2) Number, type, and location of smart devices connected to AIC smart meters by customers;
 - 3) Numbers of smart device developers, manufacturers and retailers who participate in the Program; and
 - 4) Surveyed customer satisfaction/dissatisfaction with the Program.

(Docket No. 13-0498, 04/22/2015 Final Order on Reopening at 35-36; 42-46).

As explained below, each of these directives are met through this Program.

II. PROGRAM INITIATION AND TIMING

AIC will initiate the Program as part of AIC's AMI functionality roll-out, which is presently underway. By doing so, AIC will be in accordance with the Final Order on Reopening to initiate the Program within 90 days of this filing.

With respect to electric AMI, the technology of which this Program targets, in 2012 and 2013 there were no AMI electric meters installed, but approximately 780,000 AMI meters are estimated to be installed during the period of 2014-2019, representing 62% of the total number of AIC electric meters currently in service. As previously explained to the Commission, AIC has purchased a ZigBee enabled Home Area Network ("HAN") communication chip, which is

integrated into the electric meter that meets the current ZigBee Smart Energy communication standard, an industry standard for communication with "behind-the-meter" devices.

As part of AIC's requirement to provide annual updates to the Illinois Commerce Commission regarding AMI deployment, AIC has committed to allowing customers the ability to register "behind-the-meter" devices with the AMI system in early 2016. (April 1, 2015 AMI Plan Update Report, attached hereto as Attachment A, at p.22.)

In 2015, Ameren Illinois will begin verification of consumer devices at its Technology Applications Center ("TAC"). TAC personnel have already begun soliciting consumer device manufacturers to provide their products for verification, including outreach to manufacturers at the Distributech conference in February (which has been described as the largest US event that covers the utility industry from end to end with 10,000 attendees and more than 480 exhibitors). TAC personnel plan to begin testing those devices that meet the criteria of this Program and are provided by manufacturers in the second quarter of calendar year 2015.² AIC also plans to have a consumer device registration process in place and will provide a list of verified consumer devices on the Ameren Illinois website as early as the first quarter of 2016.

As more fully explained below, AIC is in the process of developing an automated, self-service, on-the-web registration process for customers that will be deployed in the first half of 2016. For customers that buy devices and intend to register them in the first quarter of 2016, AIC is also developing a secondary process to manually complete a customer's device registration by AIC's customer service personnel.

III. PROGRAM ATTRIBUTES

A. Testing and Validation

The Program will primarily be developed and implemented by AIC personnel and third party contractors currently assisting in deployment of AMI and energy efficiency activities. As explained in its April 1, 2015 AMI Plan Update Report, Ameren Illinois has worked with its AMI vendor Landis+Gyr ("L+G") to develop a consumer device verification procedure to test

² For clarity, AIC's energy efficiency program years start June 1 and go through May 31 of the following year.

and confirm the ability of consumer devices to be securely registered and communicate through the ZigBee Smart Energy communication standard to the AMI meter. (April 1, 2015 AMI Plan Update Report at p. 15.) This verification procedure is included as Attachment B to this compliance filing. As noted above, Ameren Illinois has already begun soliciting consumer device manufacturers to provide their products for verification. Specifically, in connection with Ameren Illinois' attendance at the Distributech conference, AIC made contact with certain consumer device manufacturers (Rainforest, Bidgely, Ecobee, Grid Rabbit, and Jasmine). Ameren Illinois has been in communication with these manufacturers and will continue the process of obtaining consumer devices from them for testing and validation as appropriate. Ameren Illinois expects to begin receiving and testing these devices in June 2015, though this is subject to the consumer device manufacturers actually providing the devices.

In addition to the outreach above, Ameren Illinois plans to update its website to provide information on the proposed consumer device validation program. The website will include information relating to the validation process, including providing instructions and an application for manufacturers to submit their devices for testing and validation. In accordance with the Final Order on Reopening, Ameren Illinois plans to have the website be the primary avenue for information on the validation process, as well as the application submission process.

Further, Ameren Illinois is developing an initial list of potential consumer device manufacturers (in addition to those listed above) that sell consumer devices. This initial list will serve as a starting point for a further review of the consumer device market, as well as identification of additional consumer devices for testing. Ameren Illinois also plans to identify and secure a third party consultant to assist as needed to coordinate further consumer device market review and manufacturer outreach. The initial objectives of this third party consultant could include: (1) reviewing the initial list of potential consumer device manufacturers, researching other manufacturers with commercially viable consumer devices, and developing a comprehensive list of potential manufacturers and devices; (2) developing an on-going plan for manufacturer outreach and review; and (3) implementing the vendor outreach plan.

It is anticipated that the third party consultant could leverage the Ameren Illinois website as the main avenue for applications and manufacturer communication, but would ultimately augment the website with other communication avenues as appropriate.

As noted above, Ameren Illinois will test and validate in a reasonable amount of time commercially viable devices in the order applications are received. Specifically, from review of other AMI deployments in the country, as well as information from L+G, Ameren Illinois estimates there are approximately 10 to 15 manufacturers with 45 to 60 commercially viable consumer devices. Assuming this estimate proves accurate, for budgeting purposes, Ameren Illinois estimates it will test about 20 consumer devices in 2015, an additional 30 in 2016, and 10 in 2017. These are estimates based on available information at this time, and Ameren Illinois does not plan to limit the number of devices it will test and validate, subject to the existing resource constraints. The actual list of validated devices will be provided to customers both on the Ameren Illinois website and through the eCustomer portal.

Ameren Illinois also plans to develop and implement an ongoing review and outreach process (leveraging any expertise of the third party consultant) so that new commercially viable devices are received and tested. Ameren Illinois plans to update the list of validated devices on a quarterly basis, adding any new devices to the list as they are validated. In addition, based on a third party consultant's ongoing reviews, Ameren Illinois plans to remove previously validated devices from the list that are no longer commercially viable. However, to the extent possible, Ameren Illinois' meters would continue to communicate with those devices removed from the list but still being used by customers, provided the manufacturers continue to support and upgrade the devices as needed.

Finally, Ameren Illinois plans to verify that previously validated devices continue to communicate with the AMI meter as AMI firmware upgrades are made. It is expected that approximately 4 firmware upgrades on average will be made each year from 2015- 2017. To the extent any devices no longer communicate with the AMI meter due to firmware upgrades, the Ameren Illinois website, and the list of validated devices, would be updated accordingly. In addition, AIC would take steps to notify the respective manufacturers of these devices, as well as the customers who are using these devices.

B. Enablement and Device Activation

Ameren Illinois plans to use its existing AMI solution software to support up to 10 enrolled smart devices per electric AMI meter. As early as mid-2016, AIC will have developed a web-enabled smart device enrollment process that will be accessible via AIC's eCustomer portal as well as AIC's Mobile Application. In doing so, customers should be able to manage their smart devices(s) via a desktop, laptop, tablet or smart phone. It is contemplated that this process will require the customer to enter in the Media Access Control ("MAC") address of the device, the install code and specific device type. Once submitted, the enrollment process will activate the pairing process between AIC's network management application, the AMI meter and the consumer smart device. An electronic feedback process will alert the customer via the enrollment page as to whether or not the smart device paired successfully with the meter. Assuming the smart device can acquire meter reads from the AMI meter, once the pairing process is successful the smart device will begin receiving near real-time readings from the AMI meter, which can be used by the consumer to make more timely informed decisions regarding energy use.

This same web-enabled process will allow customers to un-enroll a device as well. Additionally, AIC will develop and implement process changes within the AIC Customer System and AIC's AMI network management application to automatically un-enroll devices associated to service orders in which the AMI meter is removed. Moreover, the planned functionality would allow automatic pairing of enrolled smart devices with an exchanged AMI meter, if the customer remains at the premise and the meter is simply exchanged with a new one. If the customer moves out of the premise, all enrolled smart devices would also be un-enrolled automatically. Finally, if the customer moves back into AIC's service territory, the customer would be required to re-enroll each smart device using the web-enabled smart device enrollment process.

In order to provide a comparable customer experience for customers without web access, AIC plans to develop training so that a Contact Center Representatives ("CSR") will be able to emulate the web-enabled smart device enrollment process on the customer's behalf in order to enroll or un-enroll a smart device. Additionally, system changes will be developed and

implemented to provide CSRs with a list of all currently enrolled devices and pertinent events associated to the device from AIC's network management application. Standard operating procedures will be developed for the CSRs so they can provide information to the customer as to whether or not their smart device has successfully enrolled. If the customer cannot successfully enroll the device, the CSRs would document the customer's enrollment issue and transfer this information to AIC's Integrated Operations Center personnel who will provide more advanced troubleshooting enrollment support for the customer. Once the smart device is successfully enrolled, it will be the responsibility of the smart device manufacturer to provide any other support of the functionality and capabilities of the smart device.

IV. PROVISION OF CUSTOMER INFORMATION

Ameren Illinois intends to leverage the Ameren Illinois website as the primary avenue to offer customers with information relating to the Program, including information like answers to frequently asked questions, application and enrollment information, vendor information and general device information. Additionally, specific customer communication strategies will be developed to be coordinated with AMI deployment and incorporated into AIC's current AMI communications plan. This should lessen the risk of causing confusion to customers on the availability of the Program to those customers that do not have an AMI meter.

V. TRACKING & REPORTING

While development of tracking, reporting and evaluation processes are still evolving, Ameren Illinois intends to modify its existing tracking functionality, Enterprise Analytics Solution, so that it can support the tracking and reporting of information associated with the Program. AIC will develop an appropriate tracking and reporting protocol, which will include tracking the number, type, status and location of smart devices connected to AIC's AMI meters, as well as the manufacturers who participate in the Program. Additionally, AIC will evaluate customer satisfaction/dissatisfaction with the Program. Subsequent reports will be used to provide information to meet operational needs and to provide stakeholder updates, as appropriate.

VI. ESTIMATED PROGRAM BUDGET AND TRANSITION TO AMI PLAN

In accordance with the Commission's directives, AIC has allocated the "remaining emerging technologies budget," which pulls from both "the electric and gas emerging technologies budget" to fund the Program. (Docket No. 13-0498, 04/22/2015 Final Order on Reopening at 41; 44 (citing the Final Order and Amendatory Order)). As reflected in the table submitted in AIC's prior filings, these amounts total approximately \$3.5 million as follows:

Electric (\$ millions)	
Smart Devices Budget	3,094,382
Gas (\$ millions)	
Smart Devices Budget	448,098
Total (\$ millions)	
Smart Devices Budget	3,542,480 ³

(Updated AIC Consumer Smart Devices Plan (11/17/2014) at p.24).

Attachment C sets forth both the estimated operation and capital expenses, including internal labor dedicated to the approved Program. These estimated costs, which are set forth through and until May 31, 2017, are subject to change and AIC reserves the right to spend less than this amount as warranted by the detailed design process, market or technology issues that may come up and/or other practical realities of development and implementation. As contemplated by the Final Order on Reopening through its directive to use energy efficiency funds to get the Program "established and running" (*see* Final Order on Reopening at 44), all capital costs and return associated with the Program will be recovered from Rider EDR first, with the remainder coming from Rider GER, as necessary. AIC will amortize and earn a return of and on the capital investments associated with the Program through those Riders, as authorized. In addition, non-capital expenses associated with the Program will likewise be recovered through Riders EDR and GER, subject to a total Program budgetary limit (across all three Plan years) of \$3,542,480 highlighted in the table above. Any non-capital expense recovery for amounts in excess of the budgetary limit will be supplemented through the AMI

³ Given the pendency of this issues in this docket, AIC has been unable to develop or implement a smart devices program using the allocated funds, but in accordance with the Commission's directives intends to apply the unused portions of the budgets to future years' Program expense.

Plan and recovered as an expense through AIC's formula rate updates. After the conclusion of Plan 3 on May 31, 2017, any ongoing non-capital expense associated with the Program will be transitioned to the AMI Plan. To the extent any changes to the Riders are necessary to effectuate recovery of costs through either Rider EDR and Rider GER, or to effectuate smooth transfer of the Program to the AMI Plan in accordance with the Commission's directives, AIC will work with Staff and make the appropriate tariff filings.

AIC's planned budgets, cost recovery and transition of the Program to the AMI Plan is based on AIC's understanding of the Commission's directives set forth in the Final Order On Reopening, as well as prior Commission Orders addressing these issues. Upon Commission review of this compliance filing, to the extent the Commission finds that AIC's interpretation of the Final Order on Reopening to be incorrect, AIC respectfully requests that the Commission provide clear direction on the Commission's intent through a review and report on the compliance of the Program or otherwise.