

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Citizens Utility Board and Environmental Defense Fund :
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Proceeding to Adopt a GHG Metric for Smart Grid Advanced Metering Infrastructure Deployment Plans filed pursuant to Section 16-108.6 of the Public Utilities Act. : **14-0555**
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ORDER

By the Commission:

I. INTRODUCTION

On September 10, 2014, the Citizens Utility Board and Environmental Defense Fund (together “CUB/EDF” or “Petitioners”) filed a verified Petition requesting that the Illinois Commerce Commission (“Commission”) initiate a proceeding to adopt a metric for measuring reductions in greenhouse gas (“GHG”) emissions associated with Smart Grid Advanced Metering Infrastructure (“AMI”) Deployment Plans (“AMI Plans”) filed pursuant to Section 16-108.6 of the Public Utilities Act (“Act”). 220 ILCS 5/16-108.6.

Commonwealth Edison Company (“ComEd”) filed a Petition to Intervene on September 11, 2014. Comverge, Inc. filed a Petition to Intervene on October 21, 2014. The Illinois Competitive Energy Association filed a Petition to Intervene on April 14, 2015. On May 18, 2015, Ameren Illinois Company d/b/a Ameren Illinois (“Ameren” or “AIC”) filed a Petition to Intervene. Staff of the Commission (“Staff”) also participated in this proceeding.

On October 21, 2014, Ameren filed a Motion to Dismiss. On November 5, 2014, ComEd filed a Motion to Stay the Proceeding. On December 5, 2015, the Administrative Law Judge (“ALJ”) denied Ameren’s Motion to Dismiss, but granted ComEd’s Motion to Stay and stayed this proceeding until April, 2015.

On March 14, 2016, after reaching agreement with ComEd on adoption of substantially-identical GHG metrics to the ones proposed here for Ameren, ComEd and CUB/EDF jointly filed a Stipulation to Dismiss Proceeding as to ComEd. A Notice of Continuance of Hearing and Notice of Administrative Law Judge’s Ruling was issued on May 20, 2017 which stated that “the Stipulation to Dismiss Proceeding as to Commonwealth Edison Company, which was filed on March 1, 2017 is granted.”

Pursuant to notice given in accordance with the law and the rules and regulations of the Commission, an evidentiary hearing was held on February 7, 2017. At the conclusion of the hearing, the record was marked “Heard and Taken.”

Initial Briefs (“IB”) were filed on March 10, 2017 by Ameren and CUB/EDF. Reply Briefs (“RB”) were filed on March 31, 2017 by Ameren and CUB/EDF. Staff did not file a brief. The ALJ served a Proposed Order on July 27, 2017. Briefs on Exceptions were filed August 10, 2017 by CUB/EDF, Ameren and ComEd. No Replies to Exceptions were filed.

II. CUB/EDF’S POSITION

CUB/EDF note that the Act provides the Commission with the power to hold investigations, inquiries, and hearings concerning any matters covered by the provisions of the Act, or any other laws of Illinois that relate to public utilities subject to rules or regulations that the Commission may establish. 220 ILCS 5/10-101. According to CUB/EDF, any person may file a petition or complaint in writing to set forth “any act or things done or omitted to be done in violation, or claimed to be in violation, of any provision of this Act, or of any order or rule of the Commission.” 220 ILCS 5/10-108. CUB/EDF assert that they are asking the Commission to act to adopt the GHG metric in accordance with existing laws surrounding AMI and the Commission’s orders and rules interpreting such laws. CUB/EDF maintain that this request rests squarely within both CUB/EDF’s rights and the Commission’s statutory authority under the Act. CUB IB at 7-8.

The Energy Infrastructure Modernization Act (“EIMA”), CUB/EDF note, states that it is “the policy of this State that significant investments must be made in the State’s electric grid over the next decade to modernize and upgrade transmission and distribution facilities in the State.” 220 ILCS 5/16-108.5(a). CUB/EDF opine that AMI is an innovative technological offering that will enhance customer experience and choice, and has been embraced by the Commission. See 220 ILCS 5/16-108.5(f); see generally 220 ILCS 5/16-108.6. According to CUB/EDF, by a plain reading of the statute, the Commission must consider GHG emission reduction benefits resulting from AMI deployment against its not-insignificant costs to ratepayers. 220 ILCS 5/16-108.6. Petitioners further note that the Commission has stated that GHG emission reduction metrics are “metrics that appear to affect the very heart of [EIMA].” *III. Commerce Comm’n On Its Own Motion v. Commonwealth Edison Co.*, Docket No. 13-0285, Order at 11 (June 11, 2014); CUB/EDF IB at 8-9.

CUB/EDF further explain that GHGs are gases that trap heat in the atmosphere by redirecting some of the heat escaping earth back to the planet, causing damaging climate destabilization and change. Carbon dioxide, a potent and common greenhouse gas, is the most significant GHG emitted by fossil fuel-fired power generation facilities by weight and is consequently the focus of GHG emission discourse within the energy sector. Because the energy sector accounts for a significant portion of total annual GHG emissions in the United States, CUB/EDF state that the amount of carbon dioxide emitted to meet electricity demand is of pressing concern to many different parties. CUB/EDF IB at 10.

Petitioners opine that AMI technology offers significant low-cost, high-yield opportunities: shifting load away from peak hours, reducing overall peak demand, and

allowing for greater automation of the operation and maintenance of the electric system. With greater knowledge of the fact that electricity is more expensive during periods of high demand, customers may change their usage patterns. This shifting of load away from peak demand hours reduces the frequency with which peaking plants—which are typically old fossil-fueled facilities that are expensive to run and emit a large amount of GHGs to generate electricity—are dispatched. According to CUB/EDF, if a sufficient number of customers on a given system shift their usage to non-peak hours, the overall peak demand of that system will be reduced. A decrease in peak demand may allow certain older, high-emission peaking plants to retire because they are no longer needed to meet peak demand and protect reliability. Finally, CUB/EDF state that increasing the degree of automation on the distribution system reduces the number of miles that gasoline and diesel-fueled utility vehicles must travel, thereby reducing emissions. CUB/EDF IB at 10-11.

CUB/EDF maintain that tracking the amelioration of the grid's carbon-intensity due to AMI deployment will help determine which methods of communication and what sort of customer incentives work with customers. Even basic information, such as when customers use energy, can provide crucial, informative data and uniquely useful guidance. In order to take action in the most precise and deliberate manner, Petitioners assert, a comprehensive picture of the effect of AMI deployment on GHG emissions is necessary. In light of this goal, CUB/EDF recommend that the Commission adopt the CUB/EDF proposed metric, which captures the overall changes in electricity consumption of Ameren's customers as AMI is deployed across its service territory. CUB/EDF propose two different approaches: "Approach 1" allows for the use of any time interval to compare non-AMI and AMI-enabled customers, and "Approach 2" compares usage year-over-year among AMI-enabled customers. Once Ameren's AMI deployment reaches one hundred percent, the metric easily continues as a year-over-year comparison. According to CUB/EDF, this metric is simple to use but holistic in its scope, making it precisely the sort of measure needed to properly quantify changes in GHG emissions resulting from AMI deployment. CUB/EDF IB at 11-12. In this proceeding, Ameren has agreed to cooperate with developing the proposed Load Shape Approach metric and the Operational Changes Approach metric, but notably only in relation to reduced vehicle use. CUB/EDF IB at 5.

According to CUB/EDF, its proposed metric, for use by Ameren in its annual AMI Plan Updates, comprehensively quantifies reductions in GHG emissions resulting from deployment of AMI. They state that the logic behind the metric is simple: (a) Ameren presumes the deployment of AMI will lead to changes in customer energy usage at different hours in the day and throughout the year; (b) the generation type needed to meet energy demand changes based on the hour of the day and by day throughout the year; (c) lowering demand or shifting demand results in different types and amounts of generation resources used to meet demand; and (d) therefore, if different types and amounts of generation resources are used, there will be changes to the GHG emissions associated with meeting the electricity needs of Ameren's customers. CUB/EDF IB at 12-13.

CUB/EDF opine that in order to ensure that the investments in AMI recovered from customers in rates yield the benefits to which customers are entitled, Ameren must adopt a metric to assess the effect of AMI on GHG emissions. CUB/EDF note that, at least

generally, Ameren agrees that any ratepayer monies spent on its AMI program must be expended in a prudent manner. CUB/EDF also note that Ameren also insists that any GHG metric must yield meaningful results. CUB/EDF maintain that their witness, Mr. Barbeau, offers Ameren the opportunity to do both by providing a straightforward, simple, and effective GHG metric for Ameren to implement. According to CUB/EDF, Mr. Barbeau's metric uses data collected by, or available to, Ameren today to measure the impacts of shifts in time of energy usage, decreased energy use, and improvements in energy efficiency. Use of Mr. Barbeau's proposed metric does not require any new significant effort or expenditures to produce meaningful results. Petitioners explain that the metric requires only the analysis of existing non-AMI usage data, AMI usage data, a marginal emissions rate available publicly from any of several sources, and marginal generation data available to Ameren from the Midcontinent Independent System Operator, Inc. ("MISO"). CUB/EDF IB at 4.

According to CUB/EDF, their metric will unequivocally yield results that show a causal relationship between AMI deployment and GHG emission reductions by showing the full extent of quantitative changes in energy use (with attendant changes in GHG emissions) brought about as AMI is deployed in Ameren's service territory. In response to Ameren's arguments that factors could disrupt the causal relationship that the metric seeks to illuminate, CUB/EDF argue that none of these alleged conflating factors present significant problems to the use of Mr. Barbeau's metric because each can be easily identified and negated using simple analyses of existing data. CUB/EDF IB at 14-15.

For example, CUB/EDF note that Mr. Blessing, Ameren's witness, claims that Ameren lacks the ability to control for or normalize the effects of weather on its customers' usage. CUB/EDF suggest this does not appear to be the case. CUB/EDF explain that in discovery, Ameren replied to CUB/EDF that it has hourly weather data for its service territory broken down into four zones. Ameren also stated in response to discovery requests that it has the ability to determine where customers with (or without) AMI are located. Finally, Mr. Blessing stated that, to compare usage of different customers, the analysis would have to be customized for each customer or small geographical grouping of customers with similar AMI deployment dates. Taken together, Ameren clearly has the ability to identify the locations of its customers and then determine what impact the weather had on their usage. Consequently, the claim that Ameren cannot control for the effect of weather is without merit and should be rejected by the Commission. Furthermore, every single year, Ameren files AMI Updates with the Commission regarding its projected customer usage for rate filings and financial reporting; this customer usage data is normalized for the impacts of weather. CUB/EDF IB at 15-16.

Mr. Blessing further claims that the fact Ameren has customers of varying rate classes with varying average use could hinder the efficacy of Mr. Barbeau's metric. Mr. Blessing also makes similar claims regarding spaceheat customers, which can simply be identified by their significantly higher usage and excluded from a given analysis. These are similarly unjustified claims since Ameren files tariffs for each different class of customer and Ameren has numerous legal obligations to bill its customers accurately (i.e. with the proper tariff for the electric service they receive from Ameren). Mr. Blessing admits that Ameren could segregate its customer data by rate class, but dismisses the possibility claiming it would add additional layers of complexity and programming to what

already appears to be an unwieldy recommended analytical process. Petitioners note that Mr. Blessing neglects to elaborate any further on how such analysis would add complexity to the process of preparing data for use in Mr. Barbeau's metric. CUB/EDF IB at 16.

Ameren witness Blessing also claims that non-AMI customer usage data is insufficiently granular to be used in Mr. Barbeau's metric because non-AMI meters do not generate hourly load profiles. CUB/EDF opine that Ameren has disproven its own position. According to Ameren's responses to CUB/EDF data requests, Ameren already uses models to generate hourly load profiles for non-AMI meter customers in order to comply with Commission requirements relating to retail choice. In order to properly bill customers who are supplied by Alternative Retail Electric Suppliers, Ameren must calculate their usage for the volumetric portion of their Ameren delivery bill—Ameren uses a dynamic load-profiling model with static load research data to do so. CUB/EDF IB 16-17.

CUB/EDF further explain that even once AMI deployment has reached one hundred percent of Ameren's customers, the metric will serve to provide a year-over-year comparison of customer use as customers become progressively more familiar with their new AMI hardware. More importantly, while the transition to one hundred percent AMI deployment is underway, significant quantities of meaningful information will still be obtained using Mr. Barbeau's metric. CUB/EDF IB at 17.

CUB/EDF assert that their proposed GHG metric is not unduly burdensome, but rather is simple and straightforward to implement. They continue that any analytical treatment necessary to use Ameren's data, or data collected from MISO, in the metric is consistent with data analyses Ameren already completes for other purposes. In response to Ameren witness Blessing's claim regarding costs, CUB/EDF state that Mr. Blessing admits that costs for obtaining hourly marginal generation data from MISO would be *de minimis* for Ameren. Finally, CUB/EDF opine that the formula in the metric is not complex. CUB/EDF IB at 17-18.

Mr. Barbeau's metric, CUB/EDF argue, will provide substantial value, despite Ameren witness Blessing's claims. They further argue that the General Assembly also thinks that a measure of the effect of AMI on GHG emissions has value, or it would not have been listed as one of the societal benefits to be provided by AMI and weighed against its costs. Such a measure is more valuable if it captures a broader scope of the effect it is intended to quantify—reduced vehicle use and load shape changes do not come close to amounting to a broad, valuable scope of inquiry. According to CUB/EDF, a comprehensive GHG metric such as Mr. Barbeau's does. CUB/EDF IB at 18-19.

CUB/EDF dispute Ameren's claims that CUB/EDF's request for Ameren to adopt and utilize the GHG metric is an inappropriate attempt to shift methodological burdens to Ameren. Ameren cites several Commission and Illinois court cases for the proposition that, because CUB/EDF have proposed the GHG Metric, CUB/EDF should bear the burden of providing evidence upon which a finding of appropriateness may rest. CUB/EDF have done just that, through testimony and briefing in this proceeding. CUB/EDF have shown that the Commission should require Ameren to adopt the proposed GHG metric, while giving Ameren some latitude in developing the specific calculations

within the metric. Such latitude does not equate to burden shifting, nor does a requirement to work with interested parties following the close of the case. Simply put, it is Ameren that has the data, and who made the promises in its AMI Plan, not CUB/EDF. CUB/EDF stand ready and willing to contribute significant time and energy to help Ameren calculate their efforts and to provide expertise, explanation, and logistical support. CUB/EDF RB at 11-12.

CUB/EDF argue that the question in this proceeding has never been whether it should be CUB/EDF or Ameren who should be required to undertake the methodological efforts of implementing the GHG metric. Rather, it is simply a question of whether Ameren should track the benefits they promised in their AMI Plan, benefits for which its ratepayers have paid to accomplish the goals of the EIMA. CUB/EDF RB at 12-13.

III. AMEREN'S POSITION

Ameren explains that the proposed metrics, if adopted, would be included as part of the annual AMI Update that Ameren files with the Commission pursuant to Section 16-108.6 of the Act. CUB/EDF recommend that the Commission direct Ameren to compile information related to four different GHG reduction calculation approaches: 1) a Top Down Approach; 2) a Bottom Up Approach; 3) a Load Shape Approach; and 4) an Operational Changes Approach. With the possible exception of the Load Shape Approach, Ameren takes issue with its proposed role in calculating GHG emission reductions under CUB/EDF's proposal. Ameren IB at 1-2.

Ameren notes that in its original AMI Plan approval docket, the Commission ordered Ameren to discuss with stakeholders approximately 20 tracking mechanisms proposed by CUB/EDF and the Environmental Law and Policy Center ("ELPC"), which included GHG emission reduction metrics. *Ameren Illinois Company d/b/a Ameren Illinois*, Docket No. 12-0244, Order on Rehearing at 26 (Dec. 5, 2012). After discussions, Ameren agreed to report on 19 of the mechanisms including a mechanism tracking GHG reductions associated with reduced manual meter reading vehicle usage. Ameren IB at 2-3.

In both its original AMI Plan in 2012 and its most recent 2016 version, Ameren states that it quantified certain economic benefits associated with a reduction in carbon emissions based on assumed future prices of carbon. Ameren agrees with CUB/EDF that its AMI Plan and AMI-enabled technologies and programs have an impact on customer load that is not even across every hour of the day and every day of the year and the GHG reductions associated with those impacts may vary based on when they occur. Based on this agreement, Ameren discussed in its AMI Plan business case carbon reduction benefits. Ameren asserts, however, that the specific GHG metrics suggested by CUB/EDF do not appropriately measure AMI's impact on GHG reductions. Ameren IB at 3-4.

With respect to the Load Shape Approach, Ameren agrees that it will provide aggregate load shape data to parties interested in conducting studies to measure or predict the effect of load shape changes, of AMI deployment in general, on generation retirement, on construction or on the fuel mix of the generators serving load in the Ameren zone, and will not object to reasonable efforts of such parties to obtain related publicly available data from MISO. Unlike the other metrics, Ameren states that it appears that

under the Load Shape Approach, CUB/EDF are requesting that Ameren provide aggregate data and not endorse or perform a calculation. Ameren does not take issue with providing a reasonable amount of aggregate load shape data upon advance notice. Ameren IB at 5.

For the Top Down Approach, Ameren argues that the calculations proposed by CUB/EDF are unlikely to produce results that will be truly representative of GHG emission reductions attributable to the deployment of AMI. Ameren explains that the calculation would require Ameren to compare the average loads of different groups of customers (or in some cases the same groups of customers over different time periods) and then conclude that any differences are attributable to the fact that one group of customers has AMI meters and the other group does not. Ameren asserts that this approach fails to consider the element of causation – whether the deployment of AMI metering technology created or caused an effect on GHG output. Ameren concludes that without a causal link, the calculations requested by CUB/EDF can yield no meaningful comparisons. Ameren IB at 6.

As explained by Mr. Blessing, the fact that one group of customers has AMI meters and the other group does not is but one of many factors that would impact the load comparisons inherent in the CUB/EDF metrics and hence the calculated changes in GHG emissions. Other factors that will impact the load comparisons include weather, customer mix, geography, customer demographics, and regional economic influence. All of these factors will also influence the results of the GHG emissions calculations. Ameren IB at 7.

In response to CUB/EDF's argument that Ameren could simply employ the same analyses that it uses for rate filings and financial reporting to effectively remove weather's impact on customer usage in two sample time periods, Mr. Blessing explains that he is not aware of AIC performing the type of analysis that CUB/EDF suggest. Mr. Blessing further indicates that even if such analysis was technically feasible, the undertaking would be far from simple. Ameren argues that the type of weather normalization that would be needed here would not take into account the effects of meter deployment timing. Since customers have their AMI meters installed at different times across the service territory, even if you want to compare usage over a fairly broad time period, like a monthly billing cycle, the period of analysis would have to be customized for each customer or small geographical grouping of customers with similar AMI deployment dates. Adding such detail to weather normalization models and adjusting the programs to produce results for different customer subgroups and for unique time periods would be a complex, cumbersome and time-consuming effort. Ameren IB at 7-8.

With respect to the need to control for mixes of customer types, Ameren serves a mix of commercial, industrial and residential customers - all of which will either have or not have an AMI meter during the time period under consideration. Ameren witness Blessing acknowledges that it would be theoretically possible to isolate the effects of AMI meter deployment by customer type, but he explains that this segregation of customers would add additional layers of complexity and programming to what already appears to be an unwieldy recommended analytical process. Ameren IB at 9.

Ameren also raises data limitation concerns. CUB/EDF's Approach 2 of the Top Down metric – (during AMI deployment) would have Ameren attempt to track GHG

reductions during AMI deployment by comparing customer usage after AMI installation against the usage of that same group of customers prior to AMI deployment. The problem, as explained by Mr. Blessing, is that the recommendation assumes that Ameren has interval data for periods prior to AMI deployment. Other than a handful of load research interval meters, Ameren simply does not have pre-AMI hourly load information for the vast majority of its AMI-enabled customers. The availability of hourly load data would also be an issue as it relates to CUB/EDF Approach 1 (Post Deployment). In sum, Ameren simply does not have robust non-AMI hourly load data. Ameren IB at 10-11.

Ameren also has concerns with the availability of certain hourly marginal emission rate data that may be required from MISO. CUB/EDF proposed two methods for obtaining marginal emission rates. One method would require Ameren to request from MISO a regular report that would include marginal emissions rate data for each hour of the year. Unfortunately, Ameren may not be able to obtain this information. In general, MISO has a process that allows its members to request certain data that MISO may have on-hand or that may be generated without undue burden. In December 2014, Ameren submitted a request to MISO to provide a year's worth of hourly marginal resource data. After considering the amount of work involved in the request, MISO was somewhat reluctant to provide the information through the informal data request process. MISO did however ultimately agree to provide hourly data on what types of generating units were on the margin on a one time, standalone basis. MISO informed Ameren that it would have to go through a more formal project-request process to get similar data in the future. Ameren explains that this process would require Ameren to petition MISO to authorize the spending of additional capital to create a formal report containing the requested information. As a result, AIC is unsure whether it will be able to access similar data in the future. Ameren IB at 11-12.

In response to CUB/EDF witness Barbeau's argument that there are several other available sources of hourly marginal generation data if Ameren cannot obtain it from MISO, Ameren states that he may be correct. But as Ameren witness Blessing noted, if the data is publicly available, it would seem that CUB/EDF could obtain and use it for whatever purpose they deemed appropriate. It is unnecessary to require Ameren to provide information equally available to CUB/EDF. Ameren IB at 12.

Ameren argues that many of CUB/EDF's proposals lack specificity, represent an inappropriate attempt to shift methodological burdens to Ameren, and are either redundant or irrelevant. Ameren suggests that it is unclear what standard should be used to evaluate the merits of this proceeding. Regardless, Ameren avers that CUB/EDF should bear the burden of establishing the propriety of their request. Ameren has concerns with the Bottom Up Approach, including data availability concerns similar to those mentioned above. But the bigger concern is that the Bottom Up Approach is not well defined. As such, CUB/EDF appear to be shifting the burden to Ameren to determine a way to perform the calculations they request. Ameren asserts that this is improper and should be rejected. Ameren IB at 12-13.

For example, CUB/EDF's description of one component of the Bottom-Up Approach calculation is:

Change in load for program participants – For each program, *Ameren will develop a measurement of load shape change* on an hourly level for the times in which the program has impacted load.

CUB/EDF Exhibit 1.1 at 3 (emphasis added). Ameren explains that there are many factors that can influence customer load other than the existence of AMI meters and utility programs such as Peak-Time Rewards or Residential Real-Time Pricing programs. It appears that in the case of the Bottom Up Approach, CUB/EDF are asking Ameren to find a way to isolate and account for the myriad of variables. Ameren recommends that the Bottom Up Approach be rejected as undefined and incomplete, and as inappropriately shifting burden to Ameren. Ameren IB at 13.

Ameren notes the Operational Changes Approach is plagued by similar deficiencies. As described in CUB/EDF Exhibit 1.1, under the Operational Changes Approach, Ameren would be required to work with interested parties to develop a measure of GHG reductions attributable to operational changes made possible by AMI deployment, including changes related to both reduced vehicle use and line loss reductions as they relate to voltage optimization. Unfortunately, this approach: (1) ignores the work AIC is already undertaking to report on GHG reductions associated with reductions in vehicle usage; and (2) disregards the fact that AIC does not currently have an AMI-enabled line loss reduction program in place. Ameren IB at 13-14.

IV. COMMISSION ANALYSIS AND CONCLUSION

CUB/EDF propose that Ameren be required to include their proposed GHG metrics as part of the annual AMI Update that Ameren files with the Commission pursuant to Section 16-108.6 of the Act. 220 ILCS 16/108.6(e). EIMA enumerates benefits which are to be considered in the cost-beneficial analysis of a utility's AMI Plan. EIMA includes the following as a potential benefit of AMI deployment:

The total benefits shall include the sum of avoided electricity costs, including avoided utility operational costs, avoided consumer power, capacity, and energy costs, and avoided societal costs associated with the production and consumption of electricity, as well as other societal benefits, including the greater integration of renewable and distributed power resources, reductions in the emissions of harmful pollutants and associated avoided health-related costs, other benefits associated with energy efficiency measures, demand-response activities, and the enabling of greater penetration of alternative fuel vehicles.

220 ILCS 5/16-108.6(a). Also, the Commission has previously endorsed GHG emission reduction metrics and stated that:

The Commission notes that the two metrics at issue, reduction in greenhouse gas emissions enabled by smart grid technology, and improvement in line loss reductions enabled by smart grid technology, are not insignificant metrics. In fact,

they are metrics that appear to affect the very heart of the Energy Infrastructure Modernization Act, as they concern the potential societal benefits associated with Smart Grid AMI deployment.

Ill. Commerce Comm'n On Its Own Motion v. Commonwealth Edison Co., Docket No. 13-0285, Order at 11 (June 11, 2014). Based on EIMA and the Commission's previous findings, the Commission agrees with CUB/EDF that a GHG metric should be included in Ameren's AMI Plan Update. The Commission notes that Ameren seems to agree conceptually with GHG monitoring, just not the metrics as proposed by CUB/EDF.

CUB/EDF's brief does not address the individual metrics, but Ameren explains that CUB/EDF recommend that the Commission direct Ameren to compile information related to four different GHG reduction calculation approaches: 1) a Top Down Approach; 2) a Bottom Up Approach; 3) a Load Shape Approach; and 4) an Operational Changes Approach.

In this proceeding, Ameren has agreed to cooperate with developing the proposed Load Shape Approach metric and Operational Changes Approach metric, but only in relation to reduced vehicle use. CUB/EDF IB at 5. It is likely that for Ameren customers with AMI meters, but that are not on a special rate plan designed to encourage load shift, reduced vehicle usage from automatic meter reads probably captures the majority of the impact on GHGs for those customers. The other aspect of the Operational Changes Approach metric is to measure the effect of a line loss program on GHGs. It appears, however, that Ameren does not currently have an AMI enabled line loss program. With respect to these two GHG metrics, the Commission sees no basis for requiring that the metric be expanded beyond that already agreed to by Ameren. Ameren is directed to report on these approaches in its annual AMI Plan Update, beginning in 2018.

For the Top Down Approach, CUB/EDF propose two different approaches: "Approach 1" allows for the use of any time interval to compare non-AMI and AMI-enabled customers, and "Approach 2" compares usage year-over-year among AMI-enabled customers. Once Ameren's AMI deployment reaches one hundred percent, the metric continues as a year-over-year comparison.

The Commission agrees with Ameren's reasoning to conclude that this metric will not show that any change in GHGs was the result of AMI deployment. Any number of variables could be at play. Moreover, CUB/EDF have not shown how the Top Down Approach will help the understanding of which methods of communication and what sort of customer incentives work with customers. In addition, the Commission is troubled by the complexity of the proposed metric. In particular, the Commission sees it to be unduly complex to require, especially under Approach 1, an estimation of non-AMI interval data and control for weather, while at the same time determining the status of AMI deployment. Accordingly, the resulting accuracy is unclear. Under Approach 2, a better result may be possible, but again, the Commission does not see how changes in GHG emissions are shown to be linked to AMI deployment by this metric. The Commission finds that when the questionable ability of the metric to measure the impact of AMI deployment is considered with the other issues raised by Ameren, the proposed metric is of limited value. Although the Top Down Approach is proposed to be included in Ameren's AMI

Update to measure a benefit of AMI, the Commission does not see that this metric accomplishes that goal and it is not adopted.

The programs under consideration in the Bottom Up Approach are residential real time pricing, peak time rebates, and any new AMI enabled programs or rate structures that become available. These programs are enabled by, and only possible due to, AMI deployment. The Commission finds this to be a significant difference from the Top Down Approach. In other words, the Commission finds that any GHG reductions shown are much more likely to be the result of these customers having received an AMI meter. This metric will provide a measure of a statutory benefit of AMI and should be included in Ameren's AMI Update.

In addition, the Bottom Up Approach does not appear to suffer from many of the problems identified by Ameren. There is no customer mix problem and controlling for weather is also easier when not also controlling for whether an AMI meter has been deployed.

Ameren complains that this metric is not well defined. This may be true, but the Commission does not agree that is a problem. CUB/EDF cannot propose a perfect, well-defined metric because the data and system capabilities are under Ameren's control and known best by Ameren. CUB/EDF have shown that the metric is necessary and have, therefore, met their burden.

In consultation with parties, including, but not limited to CUB and EDF, Ameren is directed to measure changes in GHG emissions attributable to changes in customer demand and energy use attributable to programs enabled by AMI deployment, on a program-by-program basis, using a time-based calculation of marginal emissions data, including peak time savings, residential real time pricing and any new AMI-enabled programs or rate structures that become available. Staff's input on ensuring good metric design would be valuable. The Commission finds the approach agreed to by ComEd to be a good model and encourages Ameren to use it in creating its Bottom Up Approach metric. The Commission further finds that the Bottom Up Approach may be appropriately implemented using either Method 1 or Method 2 recommended by CUB/EDF. Within 90 days, the unpopulated metric should be filed as a report in this docket. A populated version of the metric should be included for the first time in Ameren's 2018 AMI Update, subject to data availability.

V. FINDINGS AND ORDERING PARAGRAPHS

The Commission, having considered the entire record and being fully advised in the premises, is of the opinion and finds that:

- (1) the Commission has jurisdiction over the parties hereto and the subject matter herein;
- (2) Ameren should be directed to work with CUB/EDF, Staff and other interested parties to develop the Bottom Up Approach metric,
- (3) an unpopulated Bottom Up Approach metric should be filed in this docket within 90 days and a populated version of the metric should be included for the first time in Ameren's 2018 AMI Update, subject to data availability;

- (4) the Top Down Approach metric should not be adopted;
- (5) the agreement regarding the Operational Changes Approach and Load Shape Approach is reasonable;
- (6) Ameren should report on the Operational Changes Approach and Load Shape Approach in its annual AMI Updates, beginning in 2018; and
- (7) the Petition filed by CUB/EDF should be granted, in part, and denied, in part.

IT IS THEREFORE ORDERED that Ameren Illinois Company d/b/a Ameren Illinois is directed to work with the Citizens Utility Board, Environmental Defense Fund, Commission Staff and other interested parties to develop the Bottom Up Approach metric, which should be filed in this docket within 90 days.

IT IS FURTHER ORDERED that Ameren Illinois Company d/b/a Ameren Illinois is directed to include the Bottom Up Approach, Operational Changes Approach, and Load Shape Approach in its AMI Update.

IT IS FURTHER ORDERED that the Petition filed by the Citizens Utility Board and Environmental Defense Fund should be granted, in part, and denied, in part.

IT IS FURTHER ORDERED that all motions, petitions, objections, and other matters in this proceeding that remain unresolved are to be disposed of in a manner consistent with the conclusions reached herein.

IT IS FURTHER ORDERED that, subject to the provisions of Section 10-113 of the Public Utilities Act and 83 Ill. Adm. Code 200.880, this Order is final; it is not subject to the Administrative Review Law.

By Order of the Commission this 27th day of September, 2017.

(SIGNED) BRIEN SHEAHAN

Chairman