

Ameren Illinois Company's
Response to CUB and EDF Data Request
Docket 14-0555

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

CUB-EDF 1.01

In Ameren Ex. 1.0 at page 6 on lines 110 to 112, Ameren witness Mr. Blessing states that load comparisons used as a part of the GHG Reduction Metrics proposed by CUB/EDF witness Mr. Barbeau in CUB/EDF Ex. 1.0 and CUB/EDF Ex. 1.1 will be impacted by, inter alia, “weather, customer mix, geography, customer demographics, and regional economic influence.”

- a) Does Ameren have access to data on weather conditions?
- b) Does Ameren have access to weather data through time in its service territory? If yes, please specify the frequency, granularity, and level of detail with which this data is available.
- c) Does Ameren have access to weather data by area within its service territory? If yes, please specify whether Ameren has access to this data by municipality or any other geographic demarcation.
- d) Does Ameren have access to weather data by system section or any other system demarcation? If yes, please specify the system demarcations within which Ameren has access to weather data.
- e) Does Ameren have access to mapping data showing the physical location of different parts of its system?
- f) Does Ameren have the ability to distinguish what class of customer is at a given location on its system?
- g) Does Ameren have the ability to determine the relative proportions of customer classes within a geographic area? If yes, please specify whether Ameren has access to this data by municipality or any other geographic demarcation.
- h) Does Ameren have the ability to determine the relative proportions of customer classes within a section of its system? If yes, please specify the system demarcations within which Ameren can determine the relative proportions of customer classes.
- i) Has Ameren controlled for the effect of weather on customer usage in any past internal or public study or report? If yes, please provide examples.
- j) Has Ameren controlled for the effect of customer class or a mix of customer classes on customer usage in any past internal or public study or report? If so, please provide examples

- k) Has Ameren controlled for the effect of geographic location, municipality, or any other geographic demarcation on customer usage in any past internal or public study or report? If so, please provide examples.

RESPONSE

Prepared By: James C. Blessing

Title: Sr. Director, Energy Supply and Corporate Initiatives

Phone Number: 618-343-8043

Date: 9/30/2016

- a) Yes. Ameren Illinois has access to data from weather stations associated with several municipalities and airports across its service territory.
- b) Yes. Please see the response to subpart a. Ameren Illinois has access to weather data with frequency down to the hourly level. Weather data includes readings for temperature, dew point, wind speed, and cloud cover.
- c) Please see the response to subpart a.
- d) Ameren Illinois maps each customer to one of four weather zones for which it maintains weather data. The readings for the weather zones are associated with the airports in Peoria, Decatur, Belleville, and Marion.
- e) Yes
- f) Yes
- g) Yes, Ameren Illinois maintains this data by zip code.
- h) Ameren Illinois can aggregate multiple zip codes by the relative proportions of customer classes.
- i) By "controlled for the effect of weather", Ameren Illinois understands this to mean; used statistical analysis to determine the impact of weather on usage during a given time period in order to calculate and/or report usage baselined to an alternate, typically "normal", weather scenario. Subject to this definition, yes, Ameren Illinois does this for purposes including developing rate filings and financial reporting.
- j) Ameren Illinois reports usage in many contexts, including rate filings and financial reporting, by the mix of usage from various classes, including rate classes (i.e. the tariff customers are assigned to) as well as revenue classes (eg. residential, commercial, industrial). As Ameren Illinois understands the term "controlled for the effect of customer class mix", Ameren Illinois does not have any responsive studies or reports.
- k) Ameren Illinois maintains the information in its customer billing system necessary to report usage by various geographic demarcations. In the context of rate filings, Ameren Illinois reports usage by three distinct rate zones that represent different geographic subdivisions of its system. In other contexts, Ameren Illinois may periodically report usage by other geographic demarcations, such as zip code, county, or municipality. As Ameren Illinois understands the term "controlled for the effect of geographic location", Ameren Illinois does not have any responsive studies or reports.

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CUB-EDF 1.02

In Ameren Ex. 1.0 at page 8 on lines 161 to 164, Mr. Blessing states that the CUB/EDF GHG Reduction Metric “Top-Down Approach 2 – (During AMI Deployment)” requires Ameren to compare customer usage after Advanced Metering Infrastructure (“AMI”) installation against the usage of that same group of customers prior to AMI deployment. Has Ameren ever controlled for the effect of AMI deployment on customer usage in an internal or public study or report? If yes, please provide examples.

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CUB-EDF 1.03

In Ameren Ex. 1.0 at page 8 on lines 161 to 169, Mr. Blessing states that Ameren does not have access to sufficient pre-AMI deployment hourly load data to calculate CUB/EDF GHG Reduction Metric “Top-Down Approach 2 – (During AMI Deployment).”

- a) Does Ameren analyze or develop reporting on load profiles of its residential customers? If yes, please provide examples of which residential customers for which Ameren has calculated load profiles.
- b) Does Ameren have access to pre-AMI deployment hourly load profiles from any sample or sub-set of residential customers? If yes, please describe the parameters and members of all samples or sub-sets.
- c) Does Ameren have access to pre-AMI deployment hourly load information for customers whose load cannot be determined from load research interval meters?
- d) If Ameren does not have access to pre-AMI deployment hourly load information for customers whose load cannot be determined from load research intervals, does it instead have access to daily or monthly usage data for such customers?
- e) Does Ameren have aggregated data from feeders, taps, or other points on its system for non-AMI customers? If yes, please specify the frequency, granularity, and level of detail with which this data is available.

RESPONSE

Prepared By: James C. Blessing

Title: Sr. Director, Energy Supply & Corporate Initiatives

Phone Number: 618-343-8043

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- a) Yes, Ameren Illinois has developed hourly profiles for settlement purposes to support retail choice. Load profile classifications are only assigned to electric service points that are scalar (non-interval) metered. The residential service points have four profiling classes as follows:

1. RESDHH – High summer use; High winter use
2. RESDHL- High summer use; Low winter Use
3. RESDLH – Low summer use; High winter Use
4. RESDLL – Low summer use; Low winter Use

- b) Yes, each customer of a Retail Electric Supplier (RES) with a non-interval meter has a load profile class designation corresponding to the load profile used for settlement.

Ameren Illinois has adopted a dynamic load profiling method that uses statistical models of static load research data. These models reflect changes in loads associated with day-of-the-week (e.g. Monday through Sunday), holidays (e.g. Christmas, Memorial Day, etc.), hours of daylight, and temperature conditions (i.e. daily maximum and minimum dry bulb temperatures). Ameren Illinois uses these load forecasting models and the actual values for the independent variables in conjunction with actual customer usage to calculate hourly profiles for settlement purposes.

Applying the RES customer's billing cycle month consumption to the appropriate class profile for the same period results in an hourly usage profile for the customer. When creating the individual customer load profiles, the settlement system ensures that the sum of the hourly measurements equals the monthly billing cycle measurement.

- c) Objection. The phrase "load cannot be determined from load research interval meters" is vague and undefined. Subject to and without waiving this objection, Ameren Illinois responds as follows:

If the question is asking if Ameren Illinois has access to pre-AMI deployment hourly load information for customers whose load cannot be estimated by using hourly load profiles derived from load research interval meter data, then Ameren Illinois responds that all customers can be mapped to an hourly load profile.

- d) Ameren Illinois has daily data for Automated Meter Reading (AMR) customers and monthly data for customers whose meters are still manually read.
- e) Ameren Illinois has SCADA data that includes load data at various points on the distribution and bulk supply systems. Load data is metered at all 138/69 kV, 138/34.5 KV, and 161/69 kV bulk supply transformers. 10 minute average, hourly minimum/maximum/average, and daily minimum/maximum/average load values are calculated and saved for each of these locations. SCADA metering has also been installed at a limited number of distribution substations (i.e., substations with 12 kV and 4 kV secondary voltages) that provides transformer load data and, in some instances, the individual feeder load information. The data does not allow differentiating between AMI and non-AMI customer load.

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CUB-EDF 1.04

In Ameren Ex. 1.0 at page 9 on lines 178 to 179, Mr. Blessing states that Ameren made a request to the Midcontinent Independent System Operator (“MISO”) for “a year’s worth of hourly marginal resource data” in December of 2014. Has Ameren ever requested hourly marginal resource data from MISO other than the request made in December of 2014? If yes, please provide supporting documentation.

RESPONSE

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CUB-EDF 1.05

In Ameren Ex. 1.0 at pages 9 to 10 on lines 174 to 176, Mr. Blessing states that CUB/EDF “Method 2 would require Ameren Illinois to request from MISO, a regular report that would include marginal emissions rate data for each hour of the year.”

- a. Has Ameren or any Ameren representative or employee ever received assistance from MISO or any MISO representative or employee in obtaining hourly GHG emission data? If written communications were created, please provide all such documents.
- b. Has Ameren or any Ameren representative or employee ever received assistance from MISO or any MISO representative or employee in obtaining hourly generation mix data? If written communications were created, please provide all such documents.

RESPONSE

Prepared By: James C. Blessing
Title: Sr. Director, Energy Supply & Corporate Initiatives
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- a) No.
- b) Yes. As described on page 9 of my rebuttal testimony, in December of 2014 Ameren Illinois 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. They did however ultimately agree to provide hourly data on what types of generating units were on the margin on a one time, standalone basis. Ameren Illinois has since obtained no additional hourly generation mix data from MISO. Please see CUB-EDF 1.05 Attach 1, 2 and 3 for communications pertaining to the data that was provided previously, as well as previous attempts to receive similar information from MISO made by Mr. Barbeau and others at EDF.

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CUB-EDF 1.06

In Ameren Ex. 1.0 at page 9 on lines 179 to 184, Mr. Blessing states that after considering Ameren's December 2014 request described above, MISO informed Ameren that for future similar requests, Ameren "would have to go through a more formal project-request process."

- a) Has Ameren engaged in any other such "formal project-request" processes for any data from MISO? If yes, please describe the content requested, the process with MISO that was involved in obtaining the content requested, the content ultimately provided by MISO, and any associated costs imposed on Ameren or costs borne by MISO and disclosed to Ameren. Please provide all supporting documentation.
- b) Has MISO ever declined to provide a report to Ameren similar in scope to the December 2014 request described above? If yes, please describe the content requested, MISO's stated grounds for declining the request, and any further actions required of Ameren by MISO to fulfill the request. Please provide all supporting documentation

RESPONSE

Prepared By: James C. Blessing

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- a) No.
- b) No, Ameren has not requested a report from MISO similar in scope to the December 2014 request.

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CUB-EDF 1.07

In Ameren Ex. 1.0 at page 12 on lines 241 to 243, Mr. Blessing states that “Ameren Illinois does not have any specific AMI-enabled line loss reduction programs in place.”

- a) Does Ameren have the ability to calculate or estimate line losses on its system or on any section of its system? If yes, please describe the demarcations of Ameren’s system within which it can calculate or estimate line losses.
- b) As part of calculating Ameren’s Supplier Terms and Conditions, has Ameren ever calculated an hourly Loss Multiplier?
- c) Does Ameren have average load patterns for AMI customers?
- d) Does Ameren have average load patterns for non-AMI customers?
- e) Can Ameren apply a calculated Loss Multiplier to AMI customers?
- f) Can Ameren apply a calculated Loss Multiplier to non-AMI customers?

RESPONSE

Prepared By: James C. Blessing
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- a) Yes. Power flow models have been created for the transmission, sub-transmission, and distribution systems for the purposes of performing system studies and analyses. The models are based on forecasted loads and are used to evaluate specific system operating conditions. These system models are not directly tied to each other, and the simulations are run separately for the different system voltage levels and portions of the system. At the 4 kV, 12.5 kV, and 13.2 kV feeder level, each feeder is modeled and analyzed separately. The feeder models do not include the distribution transformers and secondary facilities. The loads are modeled along the feeder at the points where the transformers are connected to the primary line. The distribution feeder analysis software could be used to calculate the losses on the distribution feeder primary.
- b) Yes, at the total system level.
- c) No.
- d) No.
- e) Yes.
- f) Yes.

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CUB-EDF 1.08

In Ameren Ex. 1.0 at page 13 on lines 272 to 275, Mr. Blessing states that “with the exception of the calculation of GHG reductions attributable to reduction in manual meter reading vehicle use, Ameren Illinois has been critical of the remaining proposed GHG Reduction Metrics for years.”

- a) Has Ameren or any Ameren representative or employee ever engaged in editing or modifying a GHG Reduction Metric with Mr. Barbeau? If written communications were created, please provide all such documents.
- b) Has Ameren or any Ameren representative or employee ever edited, modified, or adapted any of the GHG Reduction Metrics suggested by Mr. Barbeau for potential use by Ameren? If written communications were created, please provide all such documents.
- c) Has Ameren or any Ameren representative or employee ever provided feedback to Mr. Barbeau on adapting the GHG Reduction Metrics that he suggested to Ameren’s system? If written communications were created, please provide all such documents.
- d) Has Ameren or any Ameren representative or employee ever proposed, discussed, presented, or otherwise provided Mr. Barbeau’s GHG Reduction Metrics to other Ameren staff, management, or executives? If written communications were created, please provide all such documents.

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- a) Yes. Ameren Illinois representatives participated in discussions with Mr. Barbeau and others in 2013 and early 2014 and offered suggested changes to the GHG metrics proposed by Mr. Barbeau. No final agreement was reached on the proposed metrics in part due to Ameren Illinois’ ongoing concerns about the validity of many of the proposed metrics. CUB-EDF 1.08 Attach 1 contains available communications related to previous discussions.
- b) Yes. Ameren Illinois representatives adjusted the proposed GHG reduction metric attributable to reduction in manual meter reading vehicle use and is voluntarily tracking a version of this proposed metric in Ameren Illinois’ annual AMI Plan Update report.

- c) Yes. Please see the above response to subpart a, including CUB-EDF 1.08 Attach 1.
- d) Objection. This request seeks information that is protected from disclosure by attorney-client privilege and that is not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving these objections, Ameren Illinois responds as follows:

Yes. Internally, Ameren Illinois representatives have discussed and considered the validity and appropriateness of the proposed GHG metrics since 2012, ultimately deciding only to voluntarily track the GHG reductions attributable to reduction in manual meter reading vehicle use. CUB-EDF 1.08 Attach 2 and 3 contain the relevant, non-privileged Ameren Illinois internal communications.