BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA.	)))	File No. EO-2012-0142

AMEREN MISSOURI'S FINDINGS RELATED TO ENERGYSAVVY'S COMMUNICATION

COMES NOW Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri") and, in response to the email sent on November 22, 2016 ("Communication") to Commissioner Stoll, of the Missouri Public Service Commission ("MPSC") by EnergySavvy, presents its findings from its investigation of the claims set forth in said Communication.

Ameren Missouri appreciates the opportunity to address the matters raised in the Communication. The points raised were related to deemed savings, quality assurance and contractor performance in certain energy efficiency programs in the Company's Missouri Energy Efficiency Investment Act ("MEEIA") 2013-2015 ("Cycle 1"). Ameren Missouri has reviewed the points in this Communication and does not believe any of the content indicates a legitimate concern given the current status of Ameren Missouri's energy efficiency programs and evaluation plans. Importantly, Ameren Missouri's review has validated its belief that the narrow points raised by the EnergySavvy email were related to the infancy of the programs at that time and have been or are currently being addressed as part of the natural evolution of its energy efficiency programs.

I. Background

Ameren Missouri was first contacted by EnergySavvy in 2015. It sought our assistance in testing a new energy analysis tool it had developed named OptixQuantify, assistance that Ameren Missouri ultimately agreed to provide. Ameren Missouri did not pay EnergySavvy for

the work performed nor was EnergySavvy an evaluation, measurement and verification ("EM&V") contractor of record for Ameren Missouri's energy efficiency programs. The relationship allowed EnergySavvy an opportunity to test, develop and improve its OptixQuantify tool while providing Ameren Missouri an opportunity to better understand the concepts and maturity of the next stage in the evolution of Measurement and Verification (sometimes referred to as "M&V 2.0") and to evaluate EnergySavvy's capabilities, all at no cost to Ameren Missouri customers. EnergySavvy did not review Ameren Missouri's entire portfolio of energy efficiency programs but rather focused its review on a limited subset of the programs. Its work was done during 2015, after the 2013 evaluation reports had been submitted, reviewed and approved by the stakeholders and Commission. The Company used this period for the EnergySavvy study to provide both pre and post installation data for use in the EnergySavvy tool.

In the spring of 2016, during the rollout of the Company's MEEIA 2016-2018 ("Cycle 2") programs, EnergySavvy submitted a bid to become a subcontractor to Ameren Missouri's primary EM&V contractor for its MEEIA Cycle 2 programs. EnergySavvy's proposal was not selected due to its additional cost, lack of proven results, and the lack of additional value EnergySavvy could offer compared to Ameren Missouri's existing evaluation contractor.

With that background, let's turn to the specific issues raised in the EnergySavvy Communication.

II. Discussion of the points made in the EnergySavvy Communication

A. Heat Pump and Tune-up Savings Levels

EnergySavvy's inference that Ameren Missouri blindly accepted and used overstated values for heat pump savings is inaccurate and misses multiple changes that occurred after 2013. During the first year of Ameren Missouri's MEEIA Cycle 1 programs, a relatively limited number of air-source heat pumps were installed. Specifically, only 715 heat pumps were

installed during 2013, compared to the 5,675 central air conditioners installed during that year. During this period, EM&V budget limitations imposed by the Stipulation and Agreement and Commission's rules, required Ameren Missouri to prioritize its evaluation and quality assurance/quality control ("QA/QC") budgets based on the expected impact of the measures. Naturally, this meant higher impact measures received more scrutiny. The EM&V contractor, whose work was reviewed by the Commission's Auditor and whose results were ultimately approved by the Commission, utilized an industry best practice engineering analysis of a sample of the participants in 2013 to provide results with 90% confidence within +/- 10% precision.

EnergySavvy, of course, did no work with any of Ameren Missouri programs (except for its limited analysis of the 2013 program year for a single program) and would be unaware of how the Company addressed the issues EnergySavvy's review raised. As the Company's Cycle 1 programs matured and the number of air source heat pumps increased, Ameren Missouri's efforts to evaluate and provide QA/QC for those measures also increased. In fact, the 2016 evaluation plan for newly installed air-source and ground-source heat pumps included installing metering in the electric panels of a sample number of homes, an analysis of daily metering data, and a billing analysis of pre- and post-installation usage; all efforts that were not included in prior evaluations. All of this was done with the intention of increasing the accuracy for determining the savings level from heat pumps.

With regard to estimates of tune-up measure savings, these have been and continue to be studied as a part of the Company's evaluation efforts. Customers receiving tune-ups often receive multiple tune-up measures which can include indoor coil cleaning, outdoor coil cleaning and refrigerant charge adjustment. The EnergySavvy analysis in this area simply validated the Company's 2013 evaluation results, which accounted for these interactive effects. Again, these results have been reviewed by the regulatory stakeholders as well as the Commission auditor and

were approved by the Commission. Additionally, these measures were again evaluated in 2014 and 2015. In fact, Ameren Missouri updated its 2016 Technical Resource Manual to reflect the 2014 evaluation of these measures and updated its 2017 Technical Resource Manual to reflect the 2015 evaluation of these measures. All of this demonstrates that the concern raised in EnergySavvy's Communication on this topic was overstated and missed the improvements Ameren Missouri made through its Commission approved EM&V efforts.

B. Rebate Payments for Replacement Heating Systems

EnergySavvy's second concern is related to the amount of rebates paid to customers who reported replacing an existing electric resistance heating system in their homes. Our EM&V contractors conduct annual process evaluations to help identify any quality control issues. Feedback from these process evaluations is discussed with our implementers and regulatory stakeholders and used to improve programs going forward. In addition, the implementers have a QA/QC plan to identify contractor issues. They provide mandatory training for contractors joining the program as well as periodic refresher training. Ameren Missouri has an advisory group of contractors that we work with on design and performance issues in the Heating and Cooling Program. All of these are focused on preventing, identifying and correcting contractor performance issues – the very concern raised by EnergySavvy. The historical pilot analysis performed by EnergySavvy did provide some interesting insights and we are conducting further research in these areas, albeit without hiring EnergySavvy to do so. The 2016 evaluation plan includes a billing analysis to identify potential issues associated with the installation of heat pumps and pre-existing heating sources. In addition, the implementer is conducting a survey with a sample of customers that fall outside the range of energy usage normally expected for customers with prior electric heat to determine if these customers may have unusual circumstances such as vacation homes. Ameren Missouri found no evidence of a widespread

problem in this area and has been consistently improving the training provided to contractors in order to avoid the concern raised by EnergySavvy in its Communication.

C. Contractor Performance

EnergySavvy's Communication describes the variability of contractor performance based on the results of their test billing analysis. EnergySavvy's Communication sets forth an overly broad conclusion about contractor performance without the benefit of specific knowledge of our project-level information and circumstances. For example, savings estimates represent an average savings level. If a contractor only worked on a small number of homes and those homes happened to be significantly different than the average home, then the contractor's results would appear skewed. But EnergySavvy's tool could not take its analysis any further; it is not capable of determining if there was indeed a problem or if the contractor did indeed work on a number of homes that did not match the average. In addition, the homes in which a particular contractor installed systems could have been of a different size or age than the average home, making it appear that contractor either under- or over-performed, while as a whole the estimates are accurate. For example, contractors in some areas may also work on a large number of vacation homes (e.g., at the Lake of the Ozarks) which would also have a very different usage pattern than homes that are occupied year-round. EnergySavvy's tool can identify that something is not average, but it cannot identify why something is not average. Identifying something beyond the average does not, by itself, indicate a concern with Ameren Missouri's results.

III. Additional General Differences between EnergySavvy's Work and Full EM&V

Ameren Missouri does not wish to denigrate EnergySavvy's work, but at this time, EnergySavvy's OptixQuantify has not yet been proven to be a statistically accurate or necessary tool in the evaluation or implementation of Ameren Missouri's energy efficiency programs. The study performed by EnergySavvy for Ameren Missouri was a limited, historical pilot case for

their software. This study was done to provide EnergySavvy the opportunity to improve their software and to provide Ameren Missouri, at no cost, a chance to review the potential usefulness of EnergySavvy's software. The study used monthly usage data rather than interval usage data, and only used a small comparison group of less than 25,000 customers rather than the total population of residential customers needed for a proper census analysis. This means that EnergySavvy created only four comparison groups instead of the hundreds that would normally be expected, and provided results far outside the level of confidence and precision required as part of evaluation best practices. Despite these limitations, the majority of results found by EnergySavvy were reasonably close to the deemed savings values. Yet, it should be noted that the methodology used in OptixQuantify has not yet been verified by an evaluator and has not been tested in a regulatory environment. Finally, Ameren Missouri would further note OptixQuantify only provides net results, rather than providing both gross and net results which are usually provided through EM&V, at least in the analysis it performed on Ameren Missouri's MEEIA programs.

IV. Summary

Ameren Missouri is confident in the results of its energy efficiency programs and the proven value these programs have delivered to our customers. We follow best practices by working with well-recognized national contractors for both implementation and for independent third party evaluation. Our evaluators conduct both impact and process evaluations on an annual basis to verify savings and identify improvement opportunities. The evaluation results are utilized to update the Technical Resource Manual savings on an annual basis. In addition to the quality national contractors, regulatory stakeholders review the evaluation reports and the Commission employs an auditor as another layer of quality control. As a result of these reviews, the portfolio level evaluated net savings for MEEIA Cycle 1 were very close to the deemed

values, with 1.157 million MWh deemed energy savings compared to 1.153 million MWh evaluated net savings; only a 0.3% difference. This highlights the fact that while there may be isolated opportunities for improvement, the aggregate results of MEEIA Cycle 1 were consistent with our initial deemed estimates (which, it should be noted, were also based on prior evaluation work).

It is the Company's opinion that EnergySavvy's tool may be useful for implementation insights, as opposed to being useful for evaluation purposes. For example, it could provide direction on process areas that may require further research, but it cannot explain *why* the results are different than expected. This is the same conclusion (in reference to M&V 2.0) described in a paper, titled "M&V 2.0: Hype vs. Reality" which was presented by another Midwestern utility and evaluator at the 2016 ACEEE Summer Study on Energy Efficiency in Buildings (attached as Appendix A).

The evaluation industry as a whole is gradually moving toward M&V 2.0, generally defined as the use of more data and analytics with smart meters and other connected smart devices. Although M&V 2.0 is in its infancy, Ameren Missouri also continues to move in that direction and we specifically asked our residential evaluator to consider using EnergySavvy's OptixQuantify in our MEEIA Cycle 2 evaluation cycle, if appropriate. Although the decision was made to not use EnergySavvy, the MEEIA Cycle 2 evaluation does move toward M&V 2.0 by using monthly billing data, daily metering data, load disaggregating models, and end-use metering installed specifically to inform the evaluation. Ameren Missouri also continues to require more timely information from our evaluators, including requiring them to conduct analyses and surveys throughout the program year to inform program implementation feedback. It is also worth noting that Ameren Missouri is an active participant in the Missouri Statewide TRM project which includes an assessment of M&V 2.0.

In summary, the limited work done by EnergySavvy did not reveal any serious flaws in either Ameren Missouri's MEEIA 2013-2015 programs or their evaluation. EnergySavvy's limited work was worthwhile, for what it was. That is, it identified areas in which the Company could investigate further to potentially improve program processes. Ameren Missouri appreciates EnergySavvy's desire to expand its work with our MEEIA programs, but our nationally recognized, independent EM&V contractors follow best practices and we are confident in the value our programs bring to customers.

WHEREFORE, Ameren Missouri respectfully requests that the Commission accept this report in response to the email received by Commissioner Stoll on November 22, 2016.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I do hereby certify that a true and correct copy of the foregoing document has been hand-delivered, transmitted by email or mailed, First Class, postage prepaid, this 24th day of January, 2017, to counsel for all parties on the Commission's service list in this case.

/s/ Wendy K. Tatro