Exhibit No. 218

Staff – Exhibit 218
Dr. Hari Poudel Testimony
Surrebuttal
File No. EO-2023-0136

Exhibit No.:	
Issue(s):	*Net Throughput Disincentive, EM&V, Rebound Effect*
Witness:	*Hari K. Poudel, PhD*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Surrebuttal Testimony*
Case Nos.:	*EO-2023-0136*
Date Testimony Prepared:	*May 30, 2024*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/ RATE DESIGN DEPARTMENT

SURREBUTTAL TESTIMONY

OF

HARI K. POUDEL, PhD

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

Case No. EO-2023-0136

Jefferson City, Missouri
May 2024

SURREBUTTAL TESTIMONY

OF

HARI K. POUDEL, PhD

UNION ELECTRIC COMPANY, d/b/a
AMEREN MISSOURI

CASE NO. EO-2023-0136

EXECUTIVE SUMMARY

Q. Are you the same Hari K. Poudel, PhD, who prefiled direct and rebuttal testimonies in this matter?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to provide a response to Ameren Missouri witnesses Steve M. Wills and J. Neil Graser's rebuttal testimonies. I will explain multiple specific subjects, including Ameren Missouri's concerns regarding the net throughput disincentive ("NTD"), the Evaluation, Measurement & Verification ("EM&V"), and the rebound effect.

Q. Ameren Missouri's witness, Mr. Wills, argues in his rebuttal testimony that Staff makes multiple claims that center on the precision of net margin rates and throughput disincentive recovery.[1] Do you think his justification for precision is related to Staff's position?

A. No. The term "precision" was used by the staff to describe how closely measurements of the same object match one another. For example, using a dartboard is a classical method of illustrating accuracy and precision. Think of the bulls-eye (center) of a dartboard as its true value. The closer darts land to the bulls-eye, the more accurate they are.

[1] EO-2023-0136, Rebuttal Testimony of Steven M. Wills, page 57 lines 18-24.

Under scenario (A), if the darts are neither close to the bulls-eye, nor close to each other, there is neither accuracy nor precision. Under scenario (B), if all of the darts land very close together, but far from the bulls-eye, there is precision, but no accuracy. Under scenario (C) if the darts are all about an equal distance from and spaced equally around the bulls-eyes, there is mathematical accuracy because the average of the darts is in the bulls-eye. This represents data that is accurate, but not precise. However, if we were actually playing darts, this would not count as a bulls-eye. Under scenario (D) if the darts land close to the bulls-eye and close together, there is both accuracy and precision.

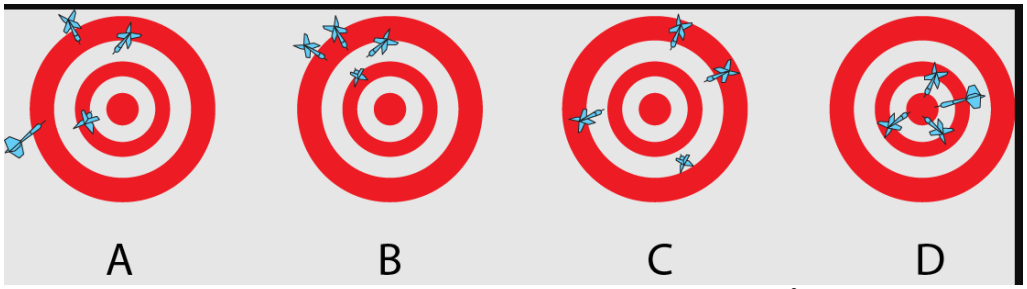

Figure. 1. Dartboards showing different accuracy and precision scenarios.[2]

Scenario (D) illustrates the player's ability to strike the target with precision and accuracy. The same concept can be applied to quantify the Net Marginal Rates ("NMRs") and the NTD in the current Missouri Energy Efficiency Investment Act ("MEEIA") application. It is clear that the timing of energy savings throughout the day is associated with varying NTD dollar values. Given the widespread adoption of time-based rates, the variance in customers taking service under time-based rates with high and low variation, and the variability in timing of energy savings, the current NTD calculation mechanism cannot strike the dartboard accurately or precisely. The current NTD calculation assumes that all customers in a class take service under the same (or essentially the same) rate plan and that the time of energy

[2]https://manoa.hawaii.edu/exploringourfluidearth/physical/world-ocean/map-distortion/practices-science-precision-vs-accuracy#:~:text=Precision%20and%20accuracy%20are%20two,Precision%20is%20independent%20of%20accuracy.

consumption is irrelevant to the revenue recovery experienced by the utility. Therefore, the current NTD as applied to customers with rate options and time-variant rates will produce results that are neither precise nor accurate because all customers in a class are not necessarily taking service under the same (or essentially the same) rate plan.

Q. Please describe existing Ameren Missouri's EM&V process.

A. Staff argues that Ameren Missouri's EM&V process relies solely on third-party evaluators without a thorough oversight of the evaluation process, sample selection, sample size, and response rate. The expected cost-effectiveness of a demand-side program relies heavily on estimated net savings calculated by Ameren Missouri itself. Staff's position is that the independence of EM&V is crucial to identifying net benefits achieved in any MEEIA cycle. Please see the testimony of Staff witness Brad Fortson for more discussion around the EM&V process and its evaluators.

Q. Can you speak to what issues Ameren Missouri's witness, Mr. Graser, brought up and how they tie to the cost-effectiveness of a demand-side program?

A. Mr. Graser testified that:

> …these circumstances would also adversely affect the program evaluator's reputation within the industry and lead to declining prospects with other potential utility clients.[3]

The reputation of evaluators is not a focus Staff's testimony. Staff's testimony focuses on the EM&V procedure rather than the personal characteristics of the individuals; Staff is not looking to "adversely affect" the reputation of program evaluators.

Q. Ameren Missouri's witness, Mr. Graser, brought up additional concern pertaining to the sample size[4] employed in the MEEIA program evaluation. Can you elaborate on this matter?

[3] EO-2023-0136, Rebuttal Testimony of J. Neil Graser, page 6 lines 18-22.
[4] EO-2023-0136, Rebuttal Testimony of J. Neil Graser, page 9 lines 18-22.

A. Staff has deliberated on the sample size and sampling technique to ensure that the EM&V study incorporates a sufficient sample size to accurately reflect all electric customers. Staff does not identify samples in the EM&V, and Staff does not have access to the evaluation samples. Contrary to the presumption made by Ameren Missouri's witness, Mr. Graser, in his rebuttal testimony, Staff's claim is supported by factual information provided by the Company. I'd like to provide a concrete example of the sample size of a particular measure evaluation that occurred.[5] The 2022 evaluation report deployed an online survey among 9,537 customers to assess the PY2022 Heating, Ventilation and Air Conditioning ("HVAC") Program. However, only 893 of them completed the survey. A response rate of 9.37% appears to be lower to generalize the impact of the HVAC Program in Ameren Missouri's territory. This is due to the fact that the small sample size is not large enough to adequately represent the thousands of customers who participated in the HVAC program.

Staff clearly understands the tradeoff between larger sample sizes and higher costs. However, Staff also clearly understands that increasing the sampling response rate does not necessarily incur an extra expense of thousands of dollars. The increasing response rate could be done without extra financial burden on the Company by leveraging its existing resources. The Company could establish follow-ups with respondents and set up reminders to boost the sampling response rate.

Q. Ameren Missouri's witness, Mr. Graser, also raises concern regarding the energy savings from appliance recycling, citing a baseline report from 2010.[6] Please provide a discussion of your points.

[5] Ameren Missouri Program Year 2022 Annual EM&V Report Volume 2: Residential Portfolio Report
[6] EO-2023-0136, Direct Testimony of Geoff Market, page 11 lines 18-20.

A. Staff has not mischaracterized how energy savings from any particular program were actually calculated. Staff is concerned about the outdated baseline because the 2010 baseline report is too old to compare modern energy efficiency equipment. Mr. Luebbert's rebuttal testimony discusses the facts that Ameren Missouri is requesting approval of: 1) the entirety of the Technical Reference Manual ("TRM") documents; 2) the Deemed Savings Tables; and 3) flexibility to change efficiency measures installed within programs without additional Commission approval. Furthermore, Staff mentioned the TRM in its testimony to elaborate on the evaluation baseline. Staff does not intend to mischaracterize the testimony of the opposing witness. If the current MEEIA application does not include a specific efficiency measure, it would be logical to remove it from the TRM. Retaining superfluous material in TRM results in a longer and more voluminous document.

Q. Ameren Missouri argues that the rebound effect should not be considered a valid justification in the process of EM&V. Can you provide a discussion of Ameren Missouri's witness Mr. Graser's comment, and explain its significance in the EM&V process?

A. Mr. Graser opposes Staff's recommendation to include the rebound impact in the EM&V process. Dr. Marke, a witness for the Office of the Public Counsel ("OPC"), also provides testimony on the rebound effect, arguing that it has not been adequately considered in the EM&V process thus far.[7] The importance lies in the fact that neglecting rebound effects can lead to significantly inflated net benefits and lost margins. Hence, Ameren Missouri should take into account the influence of the rebound effect on energy savings in the MEEIA application.

Q. Does this conclude your testimony?

A. Yes. It does.

[7] EO-2023-0136, Rebuttal Testimony of J. Neil Graser, page 21 lines 18-19.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's 4th Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	))))	Case No. EO-2023-0136

AFFIDAVIT OF HARI K. POUDEL, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW HARI K. POUDEL, PhD, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Surrebuttal Testimony of Hari K. Poudel, PhD*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

HARI K. POUDEL, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 28th day of May 2024.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Notary Public